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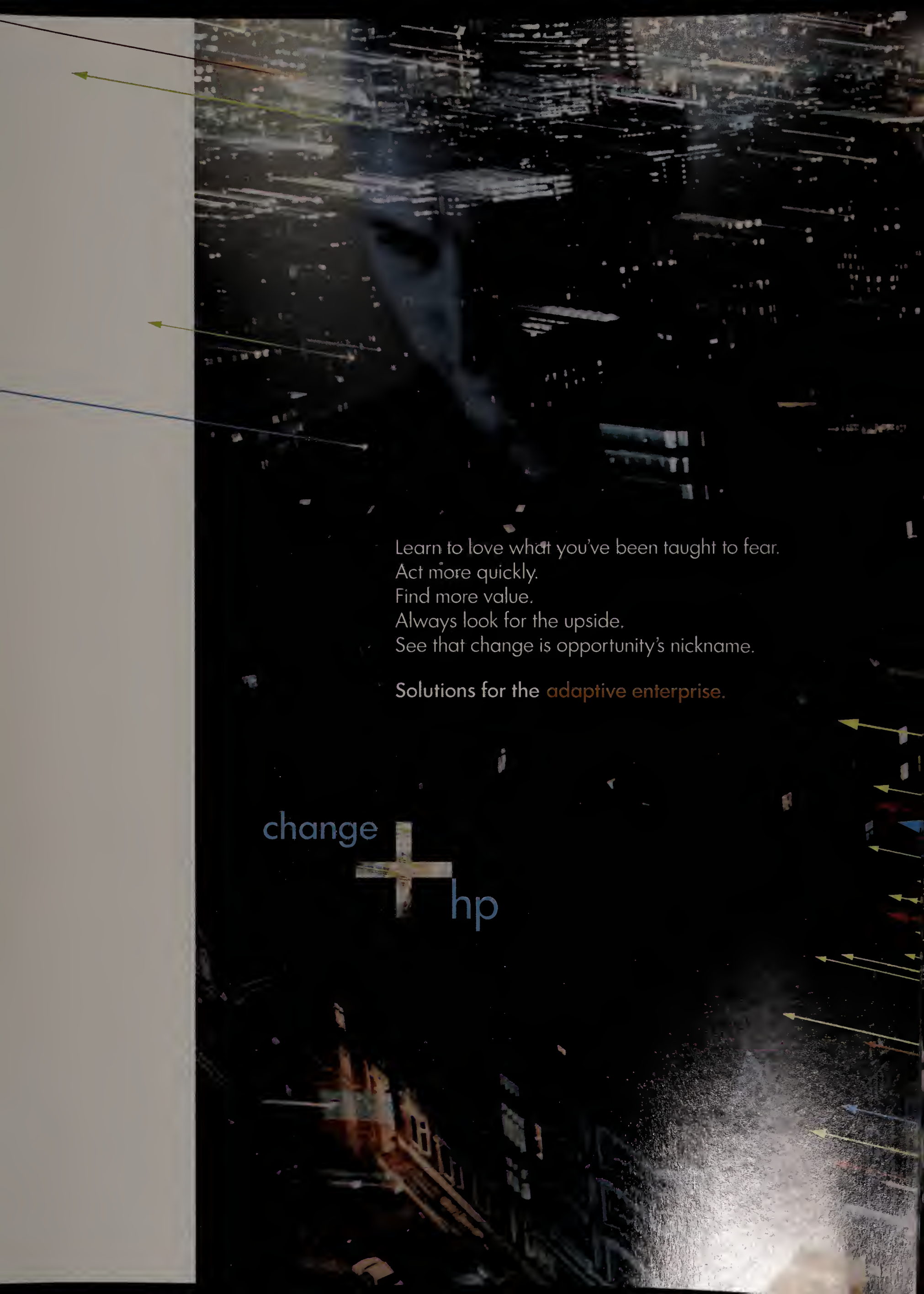
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BY CHRISTOPHER KOCH

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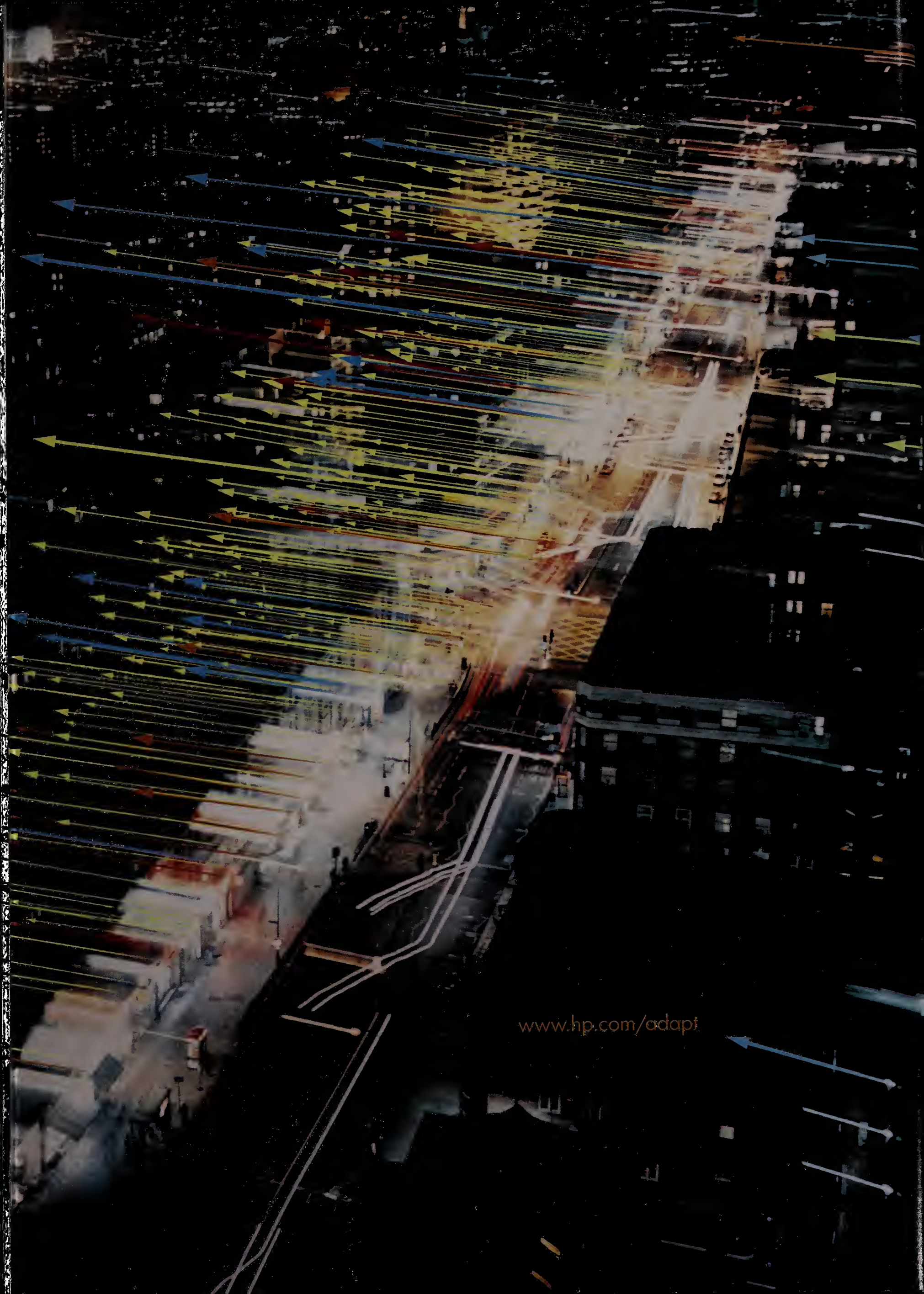
Where TCO Analysis
Can Steer You Wrong Page 44



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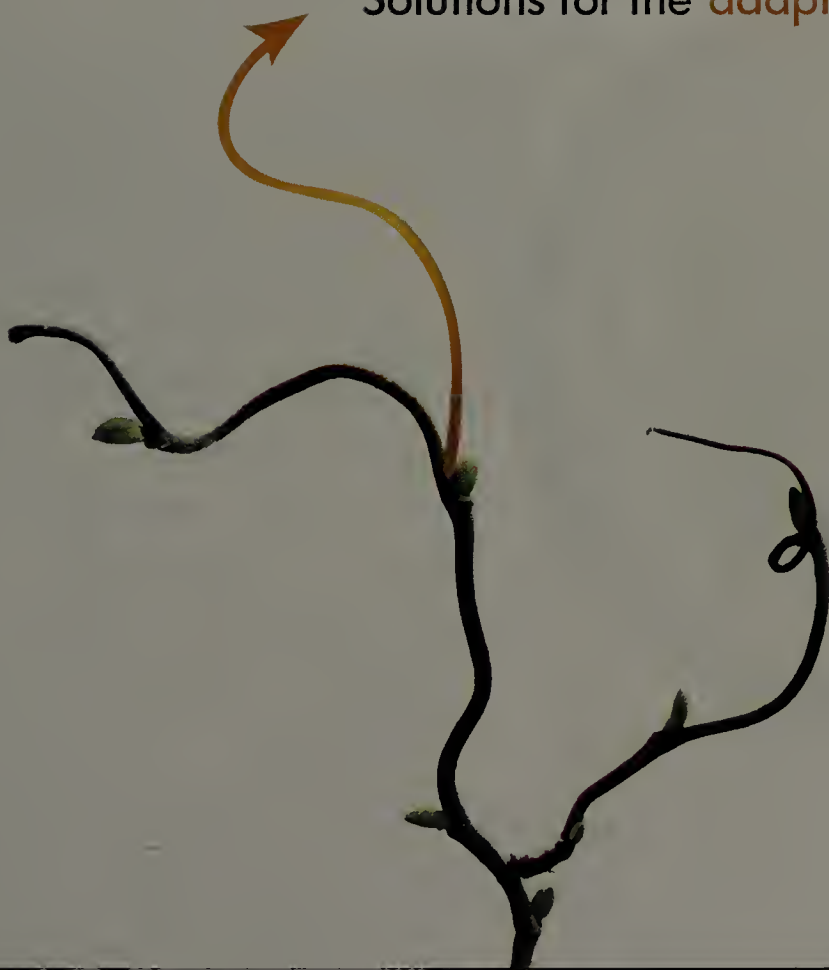


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COVER STORY

SOFTWARE QUALITY | 48

BURSTING THE CMM HYPE

U.S. CIOs want to do business with offshore companies with high CMM ratings. But some outsourcers exaggerate and even lie about their Capability Maturity Model scores. *By Christopher Koch*

Features

CUSTOMER SERVICE

AARP Is Talking 'Bout That Generation | 58

During the next 10 years, two-thirds of the 76 million baby boomers will be easing into middle age and preparing for retirement. AARP is getting ready. *By Elana Varon*



"Whether it's 76 million baby boomers coming or 35 million existing members, we serve a large audience," says AARP CIO **John Sullivan**. He has grand IT visions for the future, including a Web services rollout and unlimited online transactions for members.

Q&A WITH MAURICE SCHWEITZER | BUSINESS DECISIONS

Bias Beware | 66

It's commonly believed that the more time we devote to a project, the better the results. Not so. Wharton professor Maurice Schweitzer tells Senior Writer Stephanie Overby how CIOs can correct "input bias" and stop confusing quantity with quality.

STAFFING

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Hiring the right people for your IT organization is not an easy job, nor an exact science. We'll show you how to identify the candidates with the right attitude.

By Meridith Levinson

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Tech Savvy

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Business Savvy

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By Malcolm Wheatley

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Make no mistake: Despite the past three years of economic doldrums, innovation is alive and well.

By Gary Beach

REALITY BYTES

Wall of No Sound | 40

The recording industry is trying to stop people from listening to, talking about and sharing music. Yeah. That makes a lot of sense.

By Julie Hanson

REAL VALUE

Avoiding the TCO Trap | 44

Using the total cost of ownership metric is a good way to measure costs but a bad way to analyze the full business value of IT investments.

By Jack Keen



“The problem is that TCO has become so popular that its cost-oriented analysis is becoming a substitute for the more relevant full value analysis.”

—Jack Keen, Real Value columnist, on total cost of ownership Page 44

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Chief Beggar, Fortune-Teller and Juggler

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Oh, the Perils of the OCIO: The right way to deploy an Office of the CIO structure.

By Susan H. Cramm



CIOs are much more than just technologists and managers, says **Catherine Brune**, CTO of Allstate Insurance. Don't forget incubators, referees, fortune-tellers and psychologists.

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INTERACTIVE >features

Interactive features from March 1 to March 14

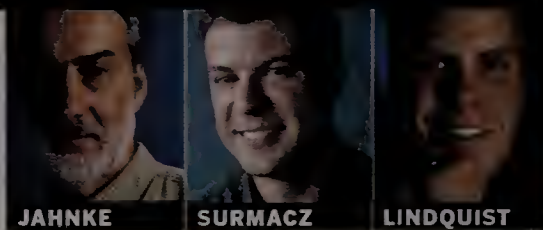
ASK THE SOURCE

How Can You Please Two Audiences at Once?

John Sullivan, CIO of AARP, knows a thing or two about the 76 million baby boomers who will begin their retirements during the next decade: They don't like to wait, and they're very wired. He also knows that he has to keep up his call centers and other more "analog" customer-facing interfaces for his 35 million existing members. And for all AARP members, Sullivan has to determine the balance between sharing information with his business partners and safeguarding members' privacy. How does he do it? Read **AARP Is Talking 'Bout That Generation** (Page 58), and then shoot your own questions to Sullivan when you **ASK THE SOURCE**. He is available to give you answers through March 14. Go to www.cio.com/experts.



John Sullivan, CIO of AARP



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LINDQUIST

Our Daily Web

MONDAY Tech Tact

Technology Editor Christopher Lindquist covers what's coming.

TUESDAY Quick Poll

Vote with your mouse, and see how other IT leaders feel about current events.

WEDNESDAY Metrics

Web Writer Jon Surmacz makes sense of the numbers.

THURSDAY Sound Off

Web Editorial Director Art Jahnke opines on managerial, political and ethical dilemmas.

FRIDAY The Big Picture

Charts and graphs that are worth a thousand words.

EVERY WEEKDAY The News

We synthesize the top IT news stories of the day.

Online Exclusives

Find That Link

Memorizing URLs is a hassle—and in some cases downright painful. To make your print-to-online jump easier, we collect all of the articles and resources mentioned in each issue and put them on one handy webpage, www.cio.com/printlinks. Select the issue date from the drop-down box at the top of the page, and then scroll down to the link you want.



ADD A COMMENT

Explode a Myth

In **The Myths of Open Source** (Page 82), we explode six myths about open source—and why it might be time to take another look at it for your company. Got a few myths of your own about open source? Explode them in **ADD A COMMENT** at the end of the online version of this article.

LEARN MORE

Weed Through the Job Candidates

Finding the right people for the right job isn't easy (see **How to Hire So You Don't Have to Fire**, Page 72). One way is ask brain-crunching teasers, riddles and logic puzzles that will demonstrate enthusiasm for taking on new challenges, and a certain amount of creative

audacity. Author John Kador shares some samples (with correct answers) in "Close Encounters with the Brainteaser Job Interview," which originally ran on our sister site, www.darwinmag.com. Find the link at www.cio.com/printlinks.

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From the Publisher

gbeach@cio.com

The Return of Innovation



Gary J. Beach

INVENTION IS MOST OFTEN THOUGHT OF as the “creation of a new idea or concept.” Innovation, meanwhile, commercializes the invention for widespread use. The United States has often led the world in high-tech invention, but it is our innovation that has given our economy its competitive edge. The economic doldrums of the past three years have dampened innovation, to be sure. But make no mistake: IT innovation is alive and well.

John Gantz, chief research officer at IDC, and a colleague of mine at IDG, our parent company, is fond of claiming that the tech invention and innovation cycle goes in 15 year waves. Inventors at Apple and elsewhere created versions of the PC in the mid-1970s, and in 1980, the popular era of the PC dawned. Fifteen years of innovation incorporating local area networks, the Windows operating system and client/server computing into corporations followed. With these innovations came increasing worker productivity that enhanced U.S. competitiveness.

The most recent big bang of innovation began around 1995, when Marc Andreessen took the Web browser he invented and started Netscape, ushering in the Internet innovation era. Cor-

porations and CIOs embraced the Internet to build out grandiose intranets with plans to extend them to trading partners via the Web. Then the bubble burst, and the Internet innovation era appeared to fizzle. But there's little doubt that the Web conferred an advantage in the marketplace for companies that innovated successfully.

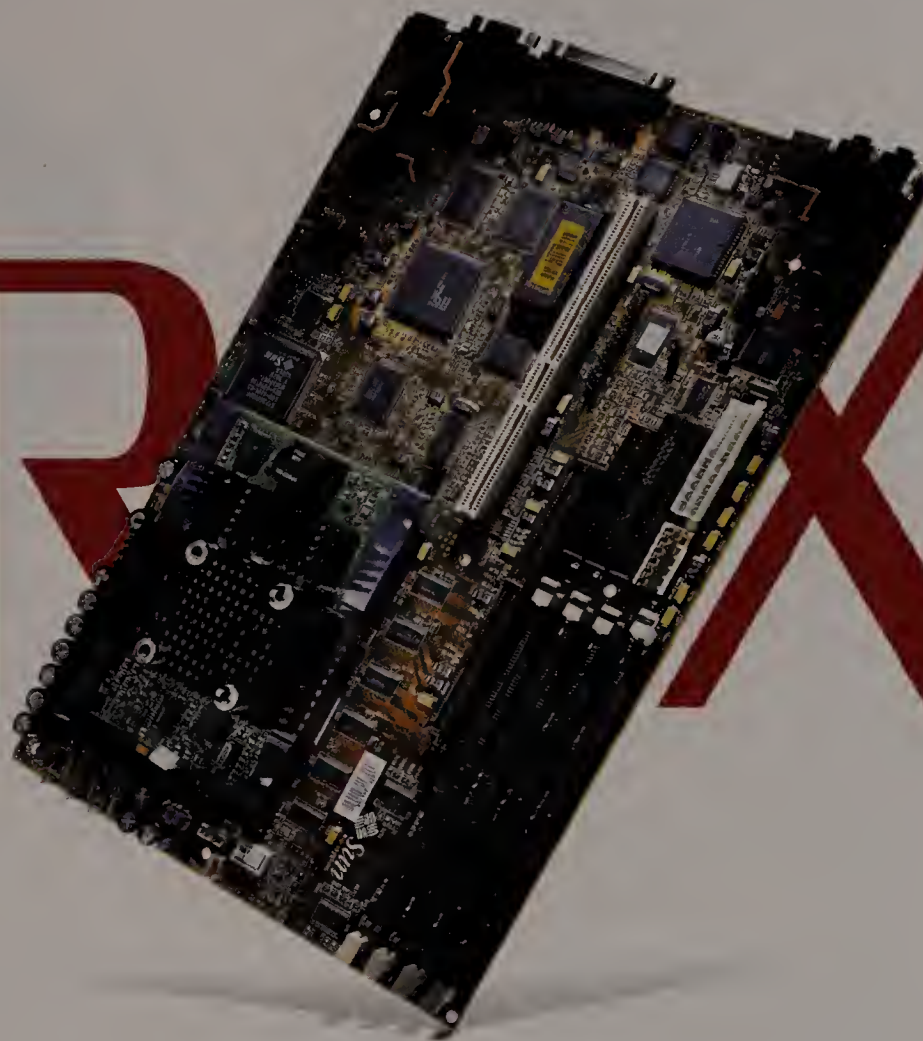
Now there's evidence that Internet-based innovation is ramping up again. In the monthly CIO Magazine Tech Poll last October, CIOs reported that 23.8 percent of all their purchases would be made online in the coming year, which was a three-year high. The poll also found that nearly half of all corporations have a significant application backlog. There's plenty of work to be done, and it isn't on maintenance or incremental upgrades to existing systems.

When I recently asked a CIO of a Fortune 1000 corporation about the most innovative project he has planned for the coming year, he turned to the strategic plan he wrote in 2000.

IT innovation may have taken a three-year breather, but CIOs have plenty of unfinished business. Tech innovation will thrive once again as CIOs go back on the offensive, pursuing more and better ways to drive revenue.

Are you launching your next cycle of innovation? Which emerging technology will change how you do business? Send me your comments at *gbeach@cio.com*.

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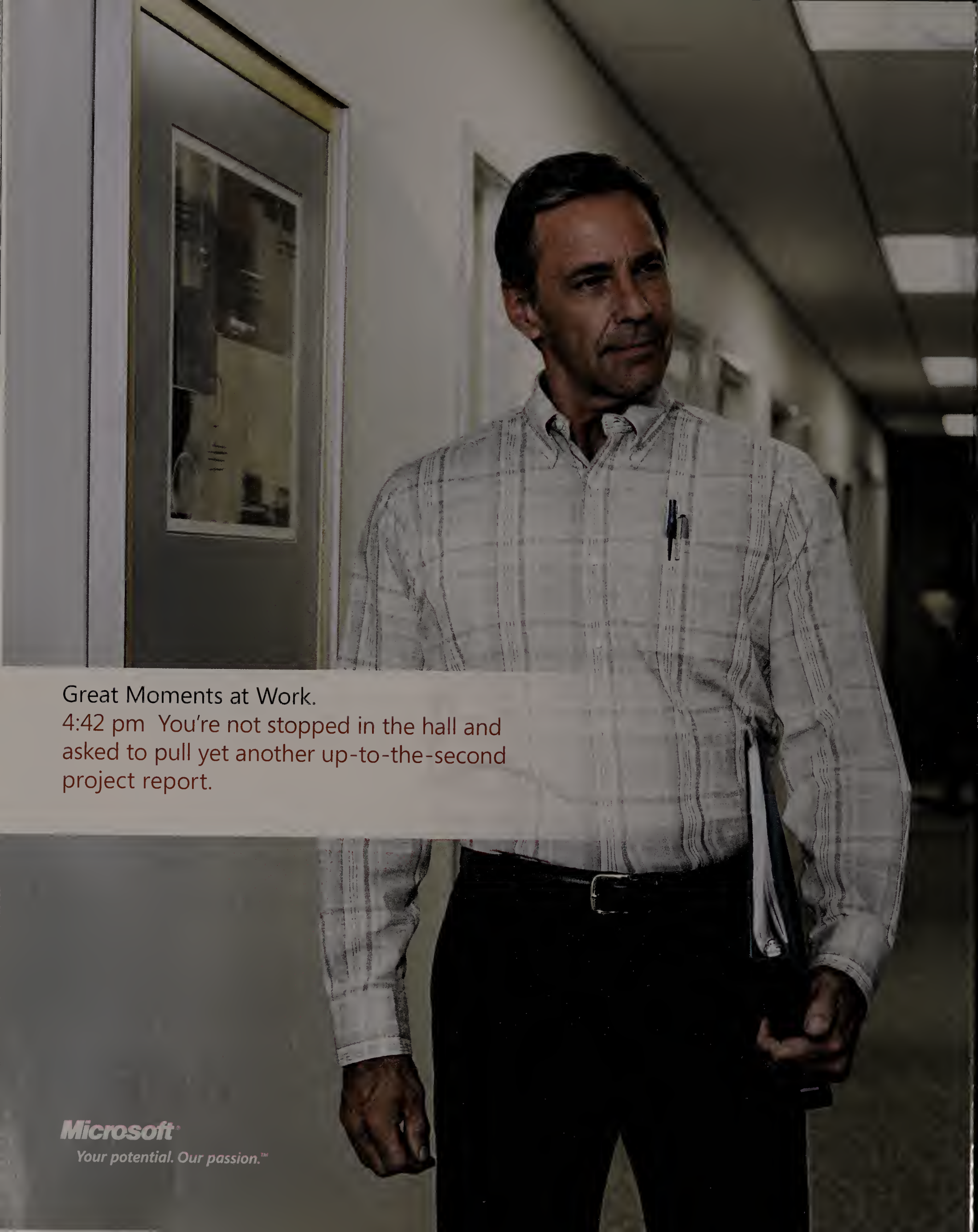
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Reader Feedback

A CALL FOR EFFECTIVE LEADERSHIP

In the Nov. 1, 2003, editor's letter ["Performance Arts"], Editor in Chief Abbie Lundberg asks if readers "agree that effective performance management is a key to your success." My answer is no. To me, performance management is counterintuitive to effective leadership.

The term *management* seems best reserved for such things as processes, projects, budgets or time—certainly not people. People respond more positively to effective leadership than to effective management. When there is effective leadership, there should be little or no need for performance management. While I acknowledge that sometimes it may be required to separate someone under less than ideal circumstances, I do believe much can be done to mitigate having to "Find, Fix or Fire Your Poor Performers" (Nov. 1, 2003). The first step is to go above and beyond in making a good hiring decision.

Here are the four key questions, in order of importance, that I consider when hiring a new team member.

- Are the individual's character and values aligned with my company's values?
- Will he fit the culture?
- Will he integrate with my team?
- What skill sets does he possess?

Generally speaking, when an individual fails, he has done so because his leadership has failed. Leadership should not be taken lightly and not be confused with the task of management. Leadership of people is a privilege and should be treated as such. Those you lead have trusted you and have an expectation that you will lead by example. Effective leadership is a key to my success.

Martin T. Crean

Regional Technology Coordinator

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NO ROOM FOR BELL CURVES

My initial reaction to "How to Find, Fix or Fire Your Poor Performers" was negative. I detest comments like, "Life is a bell curve. Get used to it." Perhaps to a statistician or a sociologist, life is a bell curve, but that cannot be the attitude of

management. I categorically reject the idea that 10 percent or 20 percent of the people in any organization are coming to work to fail. And when I "fix" or "fire" them, will another 10 percent or 20 percent take their place? That is the essence of the bell curve attitude—a constant battle waged by management to "cull out" the lowest 20 percent. Who wants to work in such an environment?

I have been in middle management for more than 15 years, and have almost 30 years of IT experience. I have managed organizations of up to 300 technical staffers. My budget responsibilities have exceeded \$30 million annually in capital expenditures and \$10 million to \$15 million annually in operating costs.

Middle management likes to joke about how thin the air gets at the top as a way to explain the irrational ideas we sometimes receive from on high. I do not mean to denigrate any executive with this playful talk. But there is a reality to the point that after spending some time at the top, many executives seem to lose connection with the trials and tribulations of the rank and file. I'm sure most CIOs will deny it, perhaps sincerely. They want to believe they have their fingers on

the pulse of the company. The truth is, that is rarely possible. The higher you go, the more issues, comments, complaints and even good ideas are filtered through a steady progression of (hopefully) well-meaning intermediaries.

James Bennett, *Senior IT Manager*

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Forced ranking, in my opinion, is not an effective management tool. A bell curve is a mathematical description of random numbers, not people, and a manager who tries to make human beings fit one is someone I would strongly avoid.

Please give readers articles that focus on how to get people trained to increase morale and productivity rather than creating a cutthroat culture that counters productivity. Good managers treat employees like assets who can be improved upon instead of costs to control.

John Cook, *Network Administrator*

Benchmark Electronics

john.cook@bench.com

HOW TO GROOM FUTURE CIOs

The shrinking role that CIOs are playing in today's business environment is an ongoing and expanding problem ("The Incredible Shrinking CIO," Oct. 15, 2003). As I ruminated on the whys and



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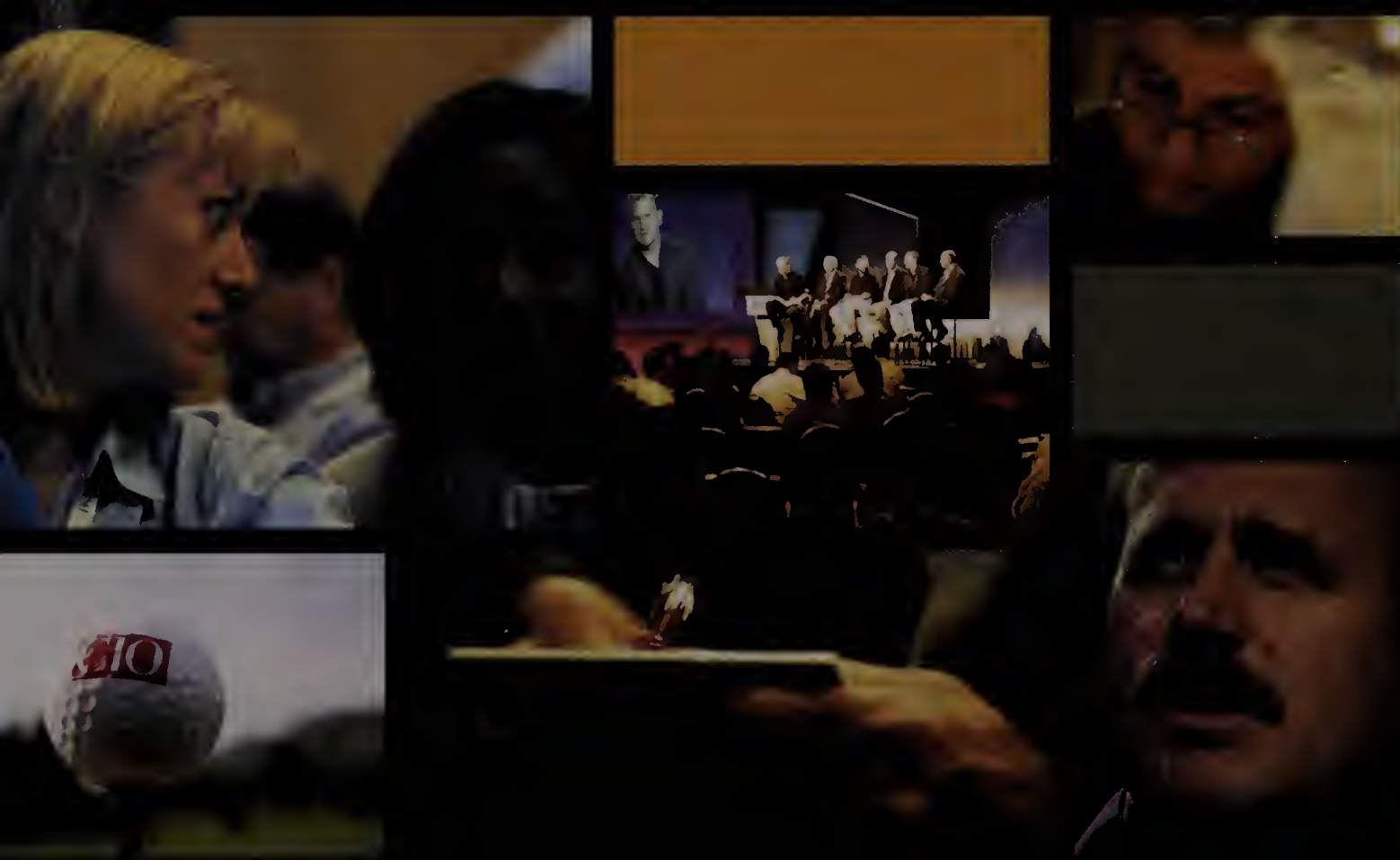
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wherefores of what has led to this disturbing reality, I read the Dec. 1, 2003, Real Value column by Jack Keen on making the business case to justify IT investment ("Make It Clear"). Both articles focus on the disconnect between the world of IT and the world of business.

The past 15 years have seen different approaches used to gain control of the integration of IT into business. One approach is to place non-IT managers in charge of IT operations. It takes a gifted manager to run an operation he doesn't understand. Another strategy is to educate the people of science to become businesspeople. Again, results vary, largely because being a businessperson is as much attitude and aptitude as it is acquiring knowledge.

The IT industry doesn't have enough leaders prepared to function effectively in the complex and diverse role that businesses demand of them. Fortunately,

though, the solution is already in place.

The strategy is a reverse variation of the science-person-to-businessperson approach. In that approach, an attempt is made to transform individuals with formal education in computer engineering or computer science into managers of the application of their science.

A reverse variation is to provide individuals with a business aptitude with a formal education in a combination of business administration, the technology of information processing, and the process of IS development and management. This approach focuses on the application of IT

in a business environment, as opposed to the science of computing itself. To be more specific, the skill set is developed when individuals are provided with an education in business systems, such as accounting, finance, production, marketing. It is enhanced when they are schooled in the techniques of technology such that they acquire practical skills in programming, networking and databases. It is completed when they learn to apply industry-recognized methodologies for system development and management.

Many of our future CIOs will come from programs that follow this model. Given time, these individuals will gain the experience needed to work effectively at the strategic level of organizations where they are needed.

Jimmie Carraway, *Senior Lecturer*

Old Dominion University

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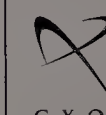
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Edited by Michael Goldberg

INVENTORY SYSTEMS

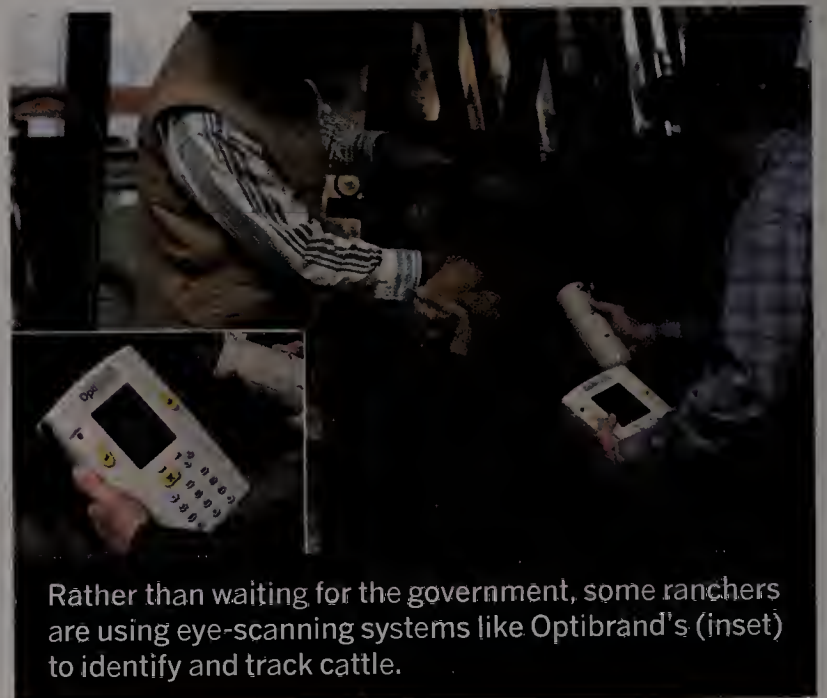
Tracking Mad Cows with IT

IT TOOK A WEEK after a Washington cow tested positive for mad cow disease in December for the U.S. Department of Agriculture to announce new safeguards. Tighter controls on the meat supply came first. (Item No. 1: no more “downer animals” that can’t walk.) Next up: an IT system to identify and track more than two dozen species of animals, including the nation’s estimated 96 million cattle.

The mad cow incident has made developing the underlying technology for the US Animal Identification Plan (USAIP)—in development since October 2002—an urgent priority for USDA CIO Scott Charbo, says Agriculture Secretary Ann Veneman.

The animal ID plan’s goal is to track the movements of more than two dozen species of mammals, birds and fish and be able to locate infected animals within 48 hours of a disease outbreak. Each animal—or, for animals such as fish, each lot of animals—would be tagged with a unique

Continued on Page 28



Rather than waiting for the government, some ranchers are using eye-scanning systems like Optibrand’s (inset) to identify and track cattle.

AIRLINE SAFETY

Turn Off That Phone!

EVEN FOR A government report, this one that collects complaints from commercial airline pilots and flight attendants has a very bureaucratic title: “ASRS Database Report Set, Passenger Electronic Devices.” But look inside and see why you should heed those pretakeoff instructions to turn off your personal electronic devices.

Flight navigation disrupted. Instrument readings corrupted. Cockpit radio communications confused. All because some people didn’t turn off their mobile phones.

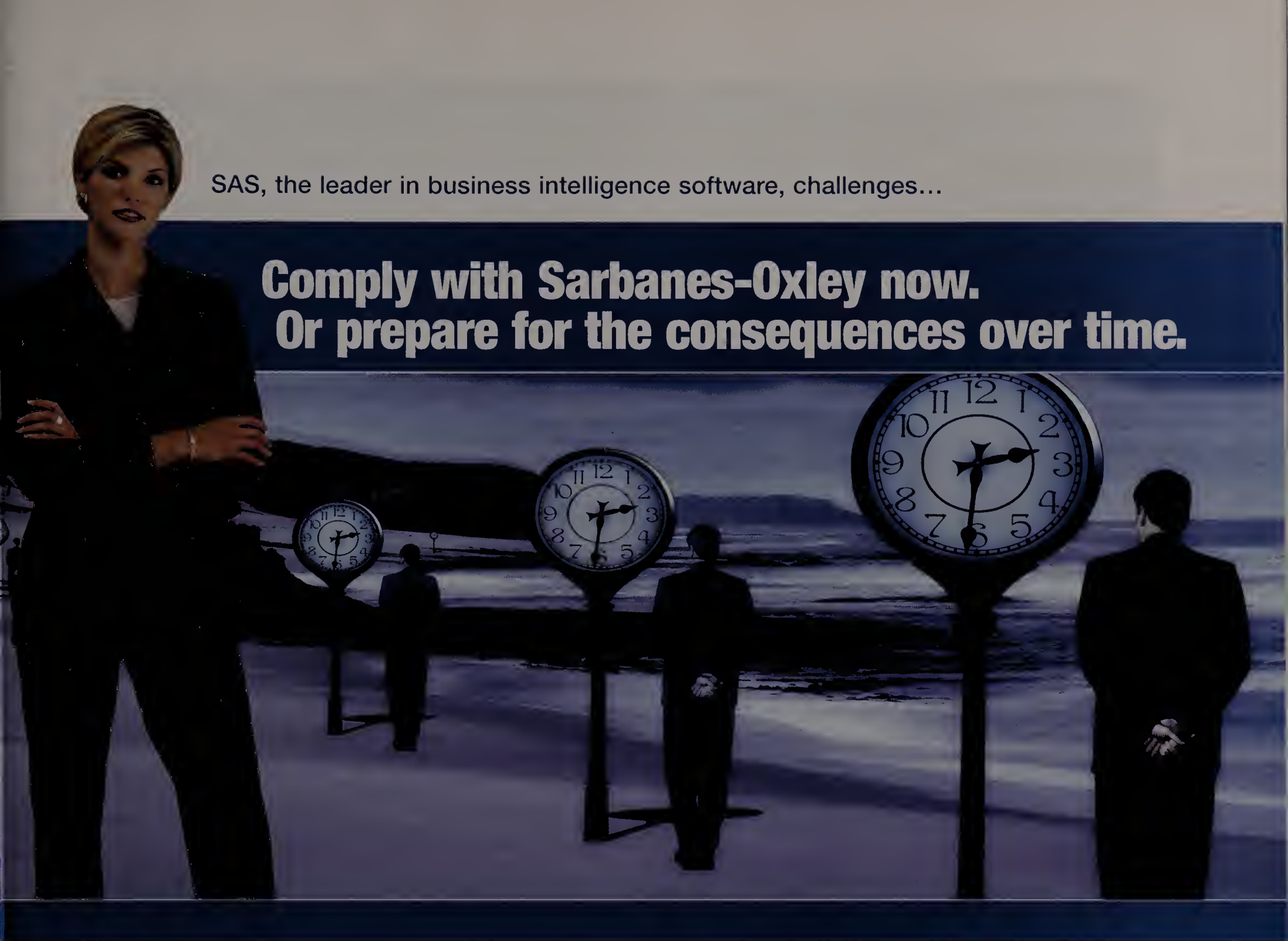
The reports, issued periodically by the NASA Aviation Safety Reporting System, cover safety concerns voluntarily reported by workers—from problem passengers to flight crew fatigue. It’s part of a program started in

1975 to collect field reports to improve aviation safety; more than 300,000 incidents have been filed. NASA publishes selected entries, ensures the anonymity of the filers, and warns readers not to draw conclusions from, say, the 50 complaints included in an October 2003 report about passengers using devices at unauthorized times.

Suffice to say, however, that commercial airline pilots and flight attendants won’t hesitate to return a Boeing 737 to the terminal and have police remove a cell phone user. This selection from the NASA report concerning a flight to Grand Rapids, Mich., shows why:

“DC-9 flight crew experienced an involuntary turn by the autopilot during cruise. Autopilot reacted normally after the captain asked passengers to turn off any personal electronic devices. Crew later learned that a cell phone in an overhead bin was heard during the time of the autopilot problem.”





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Mad Cow IT

Continued from Page 26

identification number. Organizers are endorsing radio frequency identification (RFID) tags; cattle would be fitted with ear tags containing an RFID chip storing each animal's ID number.

Forty-eight hours is faster than what occurs now with cattle. It took the government several days to confirm the infected cow's age and origin. The work to locate other cattle shipped with the infected cow from Alberta, Canada, to the United States is ongoing. At press time, 27 of 80 had been located. (Investigators also traced

the Beef Information Exchange to create data-sharing standards and lay the framework for a nationwide beef cattle tracking system.

"We don't want to replace the USAIP. We just can't wait a couple years for it," says Tim Niedecken, information products director for eMerge Interactive, a software and services vendor to the beef industry.

Niedecken, who is on an IT subcommittee for the USAIP project, says its wide scope slows progress.

For beef producers, adopting tracking tools can reassure nervous retailers and consumers. Denver-based Maverick Ranch recently has been testing a biometric ID system from Optibrand. "Our customers want to know where the animal was raised, what we fed it, and where it was born, so I have to have a process in place to help bring some of that information together," says Rex Moore, Maverick's president.

While the USDA is leaning toward an RFID-enabled system with ear tags, Moore says he prefers Optibrand's retinal scanning technology. Ear tags can be lost or tampered with, while eyes can't. It costs \$2,000 for an Optibrand reader and less than \$1 per scan. During the lifetime of an animal, it would cost about \$3 in imaging charges (shared by rancher, feed lot and slaughterhouse).

The expense is necessary, Moore adds. "The industry really does need it as a herd health tool," he says.

—Stacy Cowley

President Bush is seeking \$33 million in the 2005 federal budget to speed up development of an animal ID system.

one of the infected cow's offspring to a second farm in Washington. Because authorities couldn't identify the exact animal, the entire herd of 450 was euthanized.)

Before this mad cow case, the USDA had set July 2005 as the first deadline for ID tracking of interstate cattle movements. Progress for the project had stalled, however, as policy-makers and players from the livestock industry grappled with the program's complexity and cost (estimated to be \$600 million). Along with finding the money to foot the bill, officials need to finalize data structures, database architectures and location technologies.

Frustration at the slow speed of the USAIP's development led five agricultural data service companies in October 2003 to set up

BLOGS

News You Can Use

YOU CAN FIND a blog about anything (including blogs about blogs). You can even outsource a research intelligence blog for your company.

Techdirt, in Foster City, Calif., sells what it calls corporate intelligence—news and analysis about a company, its competitors and, in some cases, its industry, presented in bitesize chunks with Web links to more information. And while the media and analyst research houses offer industry-level research reports, Techdirt promises individualized content. Sort of *The Daily [Your Company]*, circulated to clients via e-mail or a corporate intranet.

Techdirt President Michael Masnick, who started a tech e-mail newsletter in 1997, is betting that CEOs, CIOs and other execs are

willing to outsource an element of their competitive research. He says his researchers search through more than 20,000 publications daily to create blog summaries and analysis for clients. The aim: to provide more focused content that a busy executive otherwise would miss. "Sometimes you're so focused on what's happening within your own company that your data filters are a bit skewed," says Masnick.

At document-automation company ScanSoft, Vice President of Marketing Michael Thompson uses Techdirt data for an in-house "enterprise blog" of critical information. Thompson says ScanSoft encourages employees to check the blog every morning. "The same information helps my salespeople and my CIO," he adds.



Though Techdirt's services aren't cheap (the company declined to cite its rates), Thompson says Techdirt does the job of three or four employees, and figures he's had real strategic ROI. Others must agree. Masnick says his client list has doubled since June.

—Matt Villano

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Off the Shelf

Edited by Carol Zarrow

Looking for Leaders in All the Right Places

These two books show it's best to look around your office—not to Tony Soprano—for leadership qualities that matter

Growing Your Company's Leaders: How Great Organizations Use Succession Management to Sustain Competitive Advantage

By Robert M. Fulmer and Jay A. Conger
Amacom, 2004, \$27.95

HERE'S THE PROBLEM: Because Gen X is so much smaller than the boomer generation that preceded it, the leadership pool of 35- to 44-year-olds who will fill corporate America's top slots in the coming years is growing rapidly shallower. And the prize fish in that shallow pool know very well that they are prize fish, know they can go wherever they want and don't—for various reasons—even know how to pronounce "loyalty." So, if you think you're already fighting a war for the scarce resource of leadership talent, just wait. It's going to get much worse.

The solution, according to *Growing Your Company's Leaders*, is taking succession planning seriously. And in a best-practice-based, serious-minded and well-reported and documented book, authors Robert M. Fulmer and Jay A. Conger do just that.

The book derives best practices from such leading companies as Bank of America, Dell, Dow Chemical, Eli Lilly and Sunoco. They include CEO buy-in, simple and transparent systems for identifying talent, monitoring the progress of the fish in the pool, and redesigning the system continuously to avoid bureaucratic calcification.

The discussion of each best practice has an accompanying case history and metrics that prove it's a best practice. If you believe that people are the key to any successful enterprise, then *Growing Your Company's Leaders* is key reading. —David Rosenbaum

Tony Soprano on Management: Leadership Lessons Inspired by America's Favorite Mobster

By Anthony Schneider
Berkley Books, 2004, \$14

WHEN AUTHOR Tony Schneider pitched *Tony Soprano on Management* to his publisher, it must have sounded like a winner—a leadership guide that would differentiate itself from all the others clogging the bookshelves by leveraging the popularity of the award-winning HBO crime series-cum-domestic soap opera, *The Sopranos*. And couldn't any aspiring CEO learn something from Tony, fictional though he might be? As the scriptwriters have created him, he's an effective executive who grasps the big picture, focuses on value and builds a loyal team.

For the first few pages, the conceit amuses. Pretty quickly, however, the reader realizes that the lessons Schneider extracts from the show—make decisions, stick by them, communicate the vision, stay involved—are trite, and the fundamental cynicism of the book becomes hard for the author to disguise and for the reader to ignore. Tony, after all, is a homicidal sociopath. He's decisive because

CIO Best-Seller List

Business as War: Battling for Competitive Advantage

By Kenneth Allard
John Wiley & Sons, 2003

Guts! Companies That Blow the Doors Off Business-As-Usual

By Kevin Freiberg and Jackie Freiberg
Currency, 2003

Purple Cow: Transform Your Business by Being Remarkable

By Seth Godin
Portfolio, 2003

Smartest Guys in the Room: The Amazing Rise and Scandalous Fall of Enron

By Bethany McLean and Peter Elkind
Portfolio, 2003

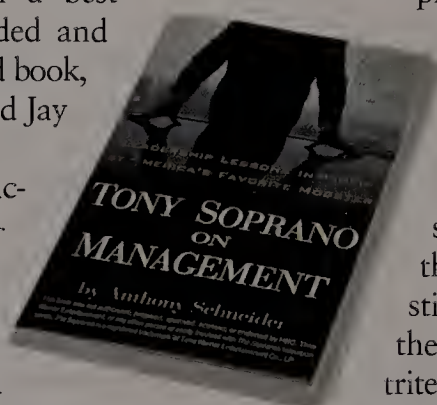
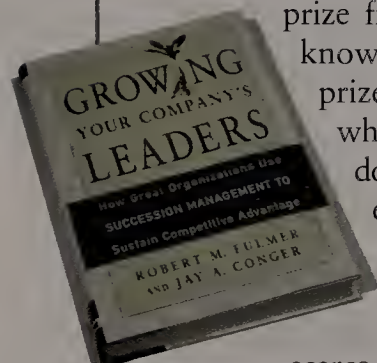
Good to Great: Why Some Companies Make the Leap...and Others Don't

By Jim Collins
HarperCollins, 2001

SOURCE: Data from January 2004, compiled by Powell's Books, Portland, Ore.

he is, for the most part, thoughtless. He moves quickly because he lacks impulse control. He focuses on value because he's greedy, a miser. His team is loyal in part because in Tony's world the disloyal don't get fired, they get whacked. As Schneider heaps praise on Tony's management style, the reader, keeping these facts in mind, begins to grow queasy. What begins as a joke ends as a rather distasteful exercise in poor authorial judgment.

Ultimately, *Tony Soprano on Management* is a con, a scam Tony himself might be proud of. Which, by the way, is not a good thing. Fuhgeddaboutit! —D.R.



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Q & A : G M ' S D A N I E L M C N I C H O L L

How GM Cuts IT Operating Costs

How do you continue to cut IT costs when you've already cut to the bone?

Daniel McNicholl, chief strategy officer of information systems and services at General Motors, explained how in a recent interview with *CIO* Executive Editor Christopher Koch.



Daniel McNicholl: "We found \$50,000 here, \$1 million there. It added up to hundreds of millions of dollars."

CIO: In a recent talk, you said that in the past six years your overall IT budget at GM has gone down from \$5 billion to about \$3 billion.

Daniel G. McNicholl: But the investment part of the budget has gone up. Break the total IT budget into two major areas—investment and operating cost. We were focused on reducing operating cost and using that as fuel to put into investments for both new applications and new infrastructure, and giving money back to the company. For every dollar you save, you put a third in on applications, a third on infrastructure and give a third back to the boss.

How did you do that?

First, everyone in IT has to make [cost cutting] a primary objective. When I ran GM North America, we would have weekly and monthly meetings on seeking out what our cost-saving opportunities were and tracking the status. If you don't make it as important as creating new capabilities, as talking about new technologies, it won't happen. Now typically how do you get it? Competitively pricing things by putting things up to bid. That's very powerful. Try not to get locked into vendors where your choices are limited.

When I first joined GM North America, we had 1,200 Lotus Notes servers scattered across the entire organization. Now I have 100 in four locations doing the same thing. Now imagine how much labor it took to support 1,200 servers scattered all around versus 100 in four locations. Consolidation of back-room operations is key. Standardization: Instead of buying five different tools to do the same thing, go to one vendor and negotiate the best price. And then we have general trends working in our favor. Every year the PC costs go down and storage goes down. So it's a combination of procurement and structural reductions.

Don't you run out of initiatives like consolidation and standardization? How do you keep extending these cost reductions?

Every year you have investment and operating costs. Some of the investment you make this year is next year's operating cost. So you're always having this opportunity to go after an operating cost—which last year was an investment—as a new area to reduce cost. Combine that with improvements in technologies and dropping prices, and there's more opportunity. But this is the part that people forget about: One year's investment is the next year's operating cost.

At GM's scale, that gives you a lot of opportunity each year. But is it purely scale?

Everyone has that same picture. I think what has separated us has been the key emphasis we placed on it from 1996. When I first got to GM and set the cost-reduction targets, my people said there's no way to do this. So we set up a project for the cost reductions called Project Alexander (after Alexander the Great and his untying of the Gordian knot). Every month we got together and came up with a list of small reductions and big reductions. We brainstormed and made it a major part of our agenda. The message was: Guys, just do it. We found that \$50,000 here, \$1 million there, and at the end of the year that added up to hundreds of millions of dollars.

So you set cost reduction up as a project as you would a software development project?

Yeah. We just kept one large list and just kept tracking it [every month]. We realized that we should track things vertically as well as horizontally. Every one of my supported CIOs would have their own lists, but some things you'd try to do across everyone, and there would be someone on my staff driving that. So each CIO has a list, plus the operations director has a list of what he's supposed to drive for everyone else.

To read more about General Motors' IT management structure, read "GM's Matrix Reloads" at www.cio.com/printlinks.

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On the Move

By Meredith Levinson

After Vendor Stint, It's Back to CIO Role for Brownell

WHEN I SPOKE with Jim Brownell back in July 2003, he was frustrated with the CIO role and by the way many companies were treating IT. He saw them putting the CIO and the IT team in a general contractor's role, solely responsible for a project's outcome, with business managers reluctant to share any credit or blame—a bad approach, he lamented.

"We can't be the project owners because we often don't have the authority to effect change in the business," he said then. "By making IT the project owner, the business puts IT in a role [where] it can't succeed."

Brownell had other complaints. Cost pressures forced CIOs to make short-sighted IT investments. More CIOs reported to COOs and CFOs. Many executives didn't see the CIO's complex role.

Those perceptions directed Brownell's job search last spring. After leaving Williams-Sonoma, he received offers from companies looking for CIOs but found them unappealing. Instead, he became senior vice president and general manager at retail software vendor Escalate. "As I looked at my options, I felt that Escalate was the best thing for me to do at the time," he told me. (Brownell repeated his concerns in our Oct. 15 cover story, "The Incredible Shrinking CIO.")

Then, about six weeks after he started

at Escalate, Brownell got a call from a friend at Coldwater Creek, a women's clothing retailer. Would he be interested in the CIO job there?

Four months later, Brownell went to work for Coldwater Creek. And not only is he back in the role he criticized, but he's reporting to the company's CFO.

Brownell, 46, cites four reasons for his turnaround:

■ **The ability to drive results.** Getting away from the CIO position helped Brownell realize that despite its frustrations, the CIO role is gratifying. As a CIO, he feels that he can add

value to a company and see his work's results. "When you're on the software side," says Brownell, "you don't get to enjoy the benefits because you're [always] onto the next thing." Not only that, but the CIO role is easier than selling software in a down economy, Brownell notes.

Brownell's experience is not unusual. "Folks can think that in moving to a company that's more technology-minded, they're going to escape from the toughness of the CIO role, but the technology stuff is the easy part," says H. Michael Burgett, president of CIO Partners, an Atlanta recruiter. "Building influence and leading organizational change is where most folks are lacking. That's what he may be discovering."



JIM BROWNELL

Jim Brownell's Résumé

EXPERIENCE

November 2003-Present

SVP and CIO, Coldwater Creek

May 2003-October 2003

SVP and GM, Escalate

November 2000-October 2002

SVP and CIO, Williams-Sonoma

February 2000-November 2000

VP of IT, Toysrus.com

August 1995-January 2000

VP of Supply Chain Systems, Gap

June 1994-July 1995

Group VP and CIO, J. Crew

July 1979-May 1994

VP of Distributed Systems, Gap

EDUCATION San Francisco State Univ.

■ **Familiar turf.** Before joining Escalate, Brownell spent 24 years in retail IT management (see résumé, above). The new job meant he wouldn't have to learn a new business model—and he had a lot of experience that a growing company would need.

■ **Upward indicators.** During his talks with Coldwater CFO Mel Dick and CEO Dennis Pence, Brownell says he learned that the retailer supports an IT strategy that fits a growing enterprise. (The onetime catalog-only merchant plans to open more than 40 stores in fiscal 2004.)

■ **A CFO on the same page.** Before accepting the job, Brownell says he told Dick that CIOs who report to CFOs often lack authority. Dick, who was acting CIO, told Brownell he understood that view. Dick says his time in IT "gave me a better appreciation of the day-to-day activities on the operations side of IT. It's much easier for me to understand some of the challenges that [Brownell] faces." Brownell says that he has the CEO's ear as an executive committee member.

Burgett says Brownell's career turn indicates a new understanding about the CIO role: "The problem is not so much the job but how the company views it."

NEWS OF OTHER MOVES

Patricia Morrison (right), CIO of **Office Depot**, was made a director at fabric and craft retailer **Jo-Ann Stores**. **Sheila Beauchesne** left her position as SVP and CIO of **Martha Stewart Living Omnimedia** to be CIO at **Bluegreen**, a Florida-based real estate developer (Beauchesne is on CIO's editorial advisory board). Furniture retailer **The Bombay Co.** hired former Accenture partner **Lucretia Doblado** as senior VP and CIO.



Morrison



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This Date in
IT History

March

Michelangelo Virus: Big Threat, Little Damage

March 6, 1992 A pastor in Georgia booting up his computer to write his church newsletter. A couple of PCs at an AT&T office in New Jersey. A Boston University lab computer. Hundreds of PCs, including an estimated 750 computers used by pharmacists in South Africa, lose data and disk drives after a virus timed to act on Michelangelo's birthday strikes their PCs, *The New York Times* reports.

It could have been worse. The virus, created by an unknown malicious code writer, spreads via infected floppy disks and heightens public awareness about the reliance on IBM-compatible PCs as business desktop tools—and the potential impact for lost work. Security specialists beg PC users to scan their machines with antivirus software. But while observers credit these efforts with preventing a worldwide virus outbreak, it doesn't help a civil engineering firm in Japan, which tells the Reuters news agency that it has lost up to \$30,000 in architectural drawings and data on three PCs. A spokesman says, "It was a lot of work. We're furious."

DON'T OPEN
ATTACHMENTS

People have been working on fighting the MyDoom worm. But there's also what's called PEBKAC—which stands for 'problem exists between keyboard and chair.' You've got to pay attention to the user.

—Lloyd Taylor, VP of technology and operations,
Keynote Systems

ASK THE SOURCE

Fixes for Your Underperforming Staff

SO, HOW DO YOU find, fix or fire your poor performers? That's the question we asked in the Nov. 1, 2003, cover story (see article at www.cio.com/printlinks). We then asked Dick Grote, president of Grote Consulting, a management consultancy specializing in performance appraisal, to answer your questions online. Here's a sample of what you asked and what he answered.

Q: Are there approaches to get people to face the reality that they are not as good as they think they are?

A: Remember this: It's your opinion that counts, not theirs. You're the boss. The purpose of the conversation about their performance (or lack of it) is not to get their agreement. They'll never agree. The purpose is to get their understanding. The best way is to state your opinion bluntly: "I've got some bad news for you, Sam. I've been reviewing your performance and, quite frankly, it isn't very good. Let's talk about what you need to do if you want to keep your job." That's a perfect opening.

Q: In our office, the slacker is the boss's friend. How can I address this?

A: Make it in your boss's best interest to support your style of management. Describe to the boss how the individual's monkey business is making *the boss* look bad. Then offer your solution, maybe a discussion with you and your boss confronting the individual, or your boss's agreement to back you up when you lower the boom. But what-



DICK GROTE

ever it may be, make sure to get your boss in your corner.

Q: Management thinks that in the best interest of the team, all members—in spite of their performance levels—should get equal opportunities. But as a worker, lack of managerial

recognition kills my morale.

A: What you've described is one of the primary manifestations of managerial cowardice—the belief that a manager should treat everyone the same. Those who benefit from this treatment are the weeds of the organization's garden, and when they discover that their manager isn't going to do any more for the best performers than for his worst, they get on the phone and call all their weedy little friends to come down to the employment office. The primary job of management is to discriminate. Not based on race or age or sex, but on performance. Good managers play favorites—they heap rewards on those who get the job done.

Q: Within a forced-ranking system, how do you compare contributions of a DBA, developer and network administrator? Their roles are different, but they must be treated as IT employees when it comes to ranking.

A: Make sure that the criteria you've chosen for your forced-ranking system cover more than just how well they do the various tasks listed in their job descriptions. Is teamwork important to your company? Make sure you use that as a criterion. Is having a positive attitude a competency you value? Put that among your forced-ranking criteria. Too often, organizations put up with insolence and attitude because the person has terrific technical skills. Forced-ranking systems can help you spot and remove those who cover their technical tracks but make life miserable for those around them.

Get More Fixes

Dick Grote is president of Grote Consulting, a management consultancy specializing in performance appraisal, and author of several books on performance appraisal. To read all the questions and answers, go to www.cio.com/experts.

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Reality Bytes

A Cold Look at Hot Trends

Wall of No Sound

The recording industry is trying to stop people from listening to, talking about and sharing music. Yeah. That makes a lot of sense.

BY JULIE HANSON

I AM A CRIMINAL. At least, according to the Recording Industry Association of America (RIAA) I am.

This is how it happened.

A friend told me to check out a fairly new group, My Morning Jacket, a country-rock band that sounds a bit like the Allman Brothers. But before I plunked down 15 bucks to buy the group's CD, I wanted to hear the songs, and My Morning Jacket is not a band that's being promoted by a big record label. They're not on MTV; they're not in heavy rotation on the radio. So the only way to hear them is to go online.

Using P2P technology, I downloaded a few songs off their new album. It was pretty easy. First, I logged on to the music file-sharing website Kazaa. Soon enough, the network found tracks from the band's new album, *It Still Moves*, opening a gateway between my hard drive and a hard drive somewhere storing the new tracks. Within minutes, I was downloading.

The recording industry calls this theft.

Well, maybe it is. But because I was able to hear My Morning Jacket, I ended up buying a \$12 ticket to its show when the band came through town. And I convinced three people to



come with me. I also gave the tracks to other friends. Next time the band comes around, they'll go to the concert.

I think that's good for the music business.

The RIAA doesn't agree.

Stop, in the Name of Profits

The recording industry blames people like me for a 14 percent decline in its revenue since 1999. It's so torqued off about all this that it's filed more than 900 lawsuits since last September. Included in those suits, Brianna LaHara, a 12-year-old living in public housing, settled a lawsuit with the RIAA for \$2,000 after admitting copyright infringement.

The RIAA has Web crawlers searching the Internet 24/7 for thieves like me and LaHara. Using the Digital Millennium Copyright Act, the RIAA subpoenaed ISP Verizon, demanding that it provide user contact information. My contact infor-

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mation. The RIAA lost that suit last December when the U.S. Court of Appeals for the District of Columbia struck down a lower-court ruling that forced ISPs to reveal the identity of any Internet subscriber accused of music piracy. But that loss hasn't discouraged the RIAA, which says the remedies it's seeking in the courts are necessary to preserve its business model.

Nice model. How's it working out for them?

By their own admission, not very well.

Meanwhile, the artists are saying we're taking money out of their pockets. Something tells me Britney will be OK.

As the recording industry attempts to fight us with litigation and legislation, technologies that facilitate our activities continue to flood the market—from Apple's iPod to sites like Kazaa, which still exists despite these lawsuits.

The RIAA says the remedies it's seeking in the courts are necessary to preserve its business model. Nice model. How's it working out for them? By their own admission, not very well.

The history of what happens when special interests try to halt social trends through legislation and prosecution is not good. The 18th Amendment, for example, didn't do much to stop people from drinking, but it did give organized crime a terrific foothold in American society, one it still enjoys today.

Set Me Free Why Don't Ya, Babe?

No matter how many 12-year-olds the RIAA sues, people are going to download free music. And whether litigation will reduce downloading remains to be seen. Shortly after the RIAA began suing, illegal downloading did slow (by almost 60 percent, according to research firm Music Forecasting). But recent reports now show an upswing. According to The NDP Group, a marketing research firm, the number of households downloading music files rose 14 percent last fall.

I look at it like this: Let me listen to new music; if I like what I hear, I will support the band and spread the word. According to Music Forecasting, 40 percent of consumers who download from the Internet do so to aid their purchasing decisions.

If the RIAA were to work with some of these online sites, guarantee me a good selection along with easy, secure downloads, I just might be willing to pay a small fee for access. If the recording industry supported one platform, people would have greater access to their catalogs.

There's some promise in new pay-per-song sites; however, they're not sponsored by the music industry but by software

companies. Apple's iTunes boasts more than 500,000 songs at a cost of 99 cents each, but Kazaa has twice as many—and they're free. Plus, I have Windows 98, and iTunes needs at least Windows 2000 to function, so it's a service I can't even use. Kazaa works fine on Windows 98 and even Windows 95.

Turn and Face the Change

In addition to working for *CIO*, I work in a record store. I also write music reviews for a local newspaper. I know what music is out there. The vast majority of the public does not. All they know is what the record industry is paying through the nose to market on television and radio. But if the industry embraced P2P technology, it could expand and diversify its audience at minimal cost. Instead of spending money on lawyers, why not spend it on new technology?

GartnerG2 Research Director of Media Mike McGuire agrees. "The RIAA is trying to put the technology genie back in the bottle," he says. "People like to share music. When the industry sees this as a benefit and a tool rather than an obnoxious side effect of P2P, that's when we make the breakthrough."

As a mass-market entity, the recording industry shouldn't be turning people off, says

John Perry Barlow, cofounder of the Electronic Frontier Foundation, a group working to protect civil liberties relating to technology, and a former lyricist for the Grateful Dead. "They're standing in the way of a more diverse market being developed," he says. "They own the traditional distributing systems but are blocking new distributing systems."

The Grateful Dead is a prime example of a band that found success by bucking the rules. Not only did the Dead allow concertgoers to plug right into their sound system, record and then trade live shows, they encouraged it.

On the surface, this made no sense. The band was competing with its own record sales. But what it was actually doing was building a fan base that continuously recruited new fans. The result was a band that became a consistent seller for its record company and provided a good living for its members.

The fact that I downloaded a few tracks from My Morning Jacket's newest album, sold a few concert tickets that might otherwise not have been sold and created a few new fans are facts the RIAA should figure out how to leverage, not prevent.

After all, I'm not a criminal. I'm a fan and perhaps, if handled with care, an unpaid marketer.

I'm the person the RIAA should be catering to, not suing. **CIO**

Editorial Operations Specialist Julie Hanson can be reached (but not by the RIAA) at jhanson@cio.com.



PHOTO BY ALBERTO CAPOLINO

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Practical Counsel for Capturing IT Value

Avoiding the TCO Trap

Using the total cost of ownership metric is a good way to measure costs but a bad way to analyze the full business value of IT investments

GREAT CONTRIBUTIONS to civilization inevitably bring great capacity for misuse. The highly popular management concept of TCO, or total cost of ownership, is no exception. TCO is a good way to measure systems costs—but not overall business value. Unfortunately, too many shops willingly allow TCO to substitute for a solid business value analysis as input into IT investment prioritization decisions. Any chance your shop is unintentionally throwing these decision-making curveballs? Let's take a closer look at the real nature of TCO and the role it should play in IT selection decisions.

On the surface, total cost of ownership is a great analysis tool, a relatively straightforward and easy way to understand and approach getting a better handle on the true IT costs of competing IT investments. But beneath TCO's veneer of financial respectability lies a process that is easily abused. Not because the concept of TCO is fundamentally flawed. The problem is that TCO has become so popular that its cost-oriented analysis is becoming a substitute for the more relevant (but more analytically challenging) full value analysis. The latter concept is crucial if proposed technology investments are

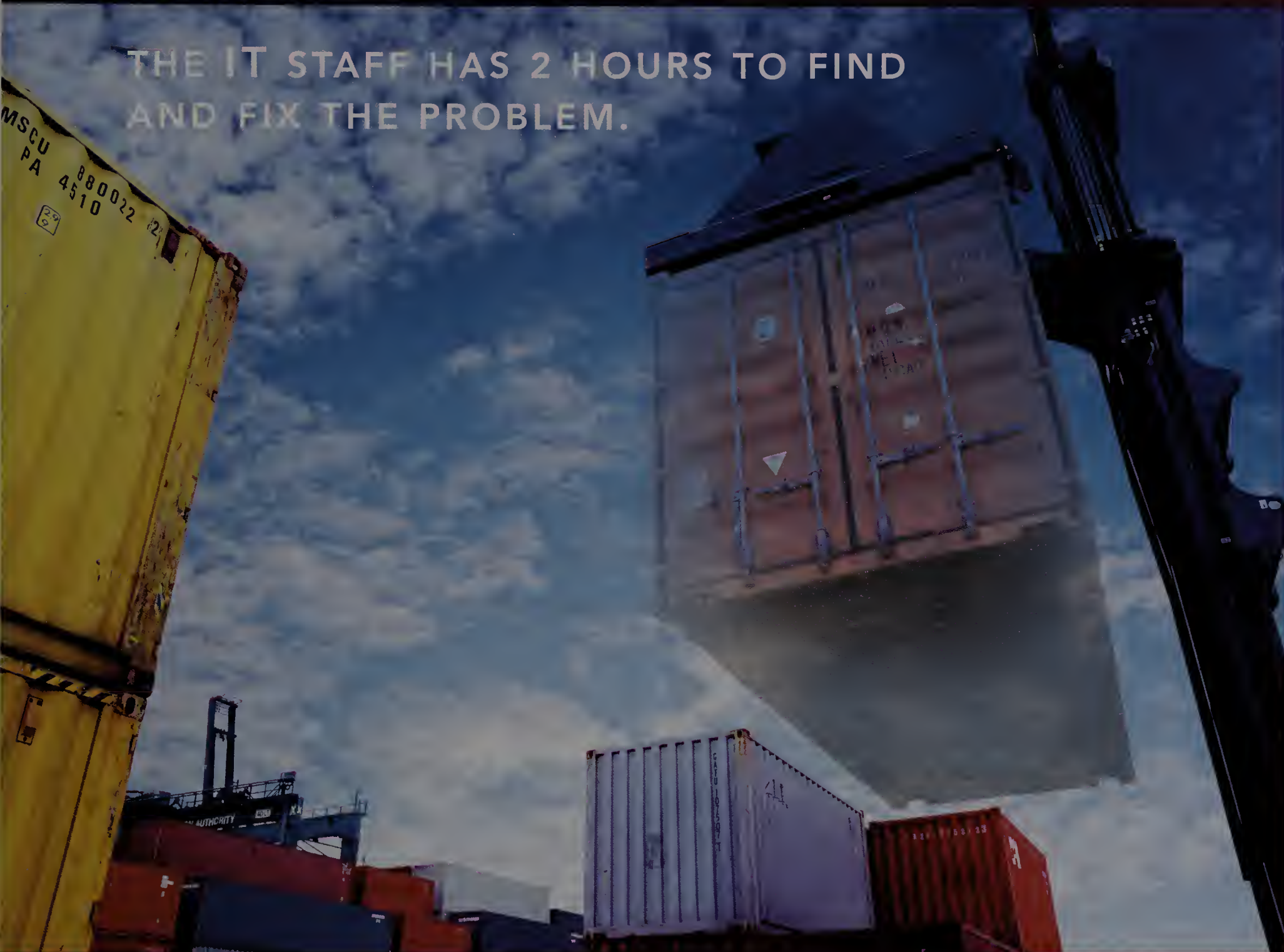


to be correctly assessed and prioritized.

TCO is just one slice of the value pie because TCO addresses only one of several building blocks that make up what I call Full Business Value (FBV). Full Business Value, essentially the entire worth inherent in a business investment, has four components: systems efficiency, systems effectiveness, business efficiency and business effectiveness. TCO's focus, as practiced by most people today, is primarily one of systems efficiency. That means TCO is only one-fourth of the complete value story.

TCO has become popular because it cleverly flushes out valid IT-related costs that have been overlooked for decades. For example, according to Gartner, the lifetime cost of a PC can be more than five times its acquisition cost. This eye-opening assertion is based on a thorough consideration of the complete cost of not only obtaining the PC but operating, supporting and maintaining it during its lifetime. As this important concept

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took hold, project sponsors and business case creators who used TCO to assess lifecycle costs were heaped with praise. Finance directors, especially, were pleased that TCO identified these outlays, in clear and easily measurable terms. TCO momentum grew as commentators sacrificed acres of trees, tons of ink and billions of pixels supporting TCO's seductive appeal. Rather than accepting the challenge of assessing harder-to-measure and more controversial types of benefits—such as higher quality processes, faster time-to-market, more satisfied customers and happier employees—many finance and IT managers locked into a tight TCO embrace and began to apply TCO as the complete justification for IT investments.

But here's an example of how TCO can uncover important benefits yet fall short in describing total value. Suppose we feel compelled to justify a server and network upgrade, in the face

By using Full Business Value—not just TCO—to justify IT investments, you may not only uncover additional benefits that make the business case, but you may also boost IT's enterprise credibility by showing the non-IT executives that IT fully understands the scope of the company's operations.

If you suspect that TCO may be misused in your organization, here are three suggestions that can help you get the value analysis right.

The problem is that total cost of ownership has become so popular that its cost-oriented analysis is becoming a substitute for the more relevant (but more analytically challenging) full value analysis.

of heavy pressure for IT to reduce—rather than expand—equipment outlays. Using TCO's "systems efficiency" focus, we capture all lifetime costs related to acquisition, installation, operation, support and maintenance of the server and network upgrade option. Thus, if investment option A (status quo) costs virtually nothing to acquire (it's already in place), but costs more to use on a daily basis than option B (upgraded servers and networks), our analysis will capture and quantify these factors. Similarly, TCO will capture such items as cost and risk of downtime as well as the maintenance and support costs. So far, so good. We now have a defensible cost analysis.

But what is the total business value of our upgrade to the company? To find out, we need to add three non-TCO components of Full Business Value to our analysis. For the "systems effectiveness" component, we could quantify factors such as the ability to bring on entirely new applications, such as CRM, because the new servers and networks would have the needed functionality and capacity. For the "business efficiency" aspect of value, we might include the value of our reduced sales-force travel costs because of better, faster data from the advanced CRM solution made possible by an improved server and network infrastructure. For the fourth component, "business effectiveness," we could examine the tangible and intangible value of having a sales force capable of introducing more new products faster, again because of the capabilities of this advanced CRM system.

1 Detect. Be alert to signs that you are too dependent on TCO for analysis. Warnings include: TCO is more than 25 percent of any value analysis and business case effort; TCO talk (rather than business value talk) dominates value analysis discussions; the terms *TCO* and *ROI* are used interchangeably; revenue-side benefits and intangibles are not used in business case justifications.

2 Recruit. If you feel a TCO-focus problem may exist, search out executive peers and other key influencers to gain their support for an enterprisewide value-culture upgrade. Ask for their help in convincing guardians of the investment decision-making process that while TCO plays an important role, there is much more required. Remind those who hesitate that visible, defensible and solid enterprise investment decision-making is a foundation of good IT and corporate governance (for example, Sarbanes-Oxley), Six Sigma quality processes and related initiatives.

3 Embed. Once you have political support for this value analysis makeover, establish and embed the FBV view within your company's IT investment decision-making processes. Help your IT selection committee insert these FBV explanations in their requirements for business case input. Develop business case templates, complete with clear documentation that visibly request such input, and explain how to find it. Establish value analysis training, complete with lots of examples of good and bad practices. Lastly, publicize early successes and look for ways to fine-tune the process as it goes forward.

TCO can uncover important benefits—but not total value. As with any good idea that has the potential to run amuck, taking the time to use TCO appropriately is a key step to success. **CIO**

Jack Keen is president of IT consultancy The Deciding Factor (www.decidingfactor.com) and coauthor of *Making Technology Investments Profitable: ROI Road Map to Better Business Cases*. He can be reached at jkeen@decidingfactor.com.



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THE CMM HYPE

BY CHRISTOPHER KOCH

U.S. CIOs want to do business with offshore companies with high CMM ratings. But some outsourcers exaggerate and even lie about their Capability Maturity Model scores.

AS SOON AS SHE WALKED INTO THE MEETING, JANE SMITH KNEW

that the executive on the other side of the desk wanted to buy something that Smith wasn't supposed to sell: a trumped up rating for the executive's software development division so that his company could qualify to bid on contracts from the United States Department of Defense.

Smith (not her real name) is one of a select group of experienced IT pros, called lead appraisers, who go into companies and assess the effectiveness of their software

Reader ROI

- ▶ Why CIOs should never take CMM ratings at face value
- ▶ How to find out if your service provider really can lay claim to that Level 5 rating
- ▶ Why there is often no such thing as an "enterprise CMM rating"

PHOTO-ILLUSTRATION BY PETE MCARTHUR

development processes on a scale from 1 (utter chaos) to 5 (continuously improving) under a system known as the Capability Maturity Model, or CMM. The company she was visiting wanted to move up to Level 2, but based on some initial discussions, Smith knew that the company was a 1. Level 1 describes most of the software development organizations in the world: no standard methods for writing software, and little ability to predict costs or delivery times. Project management consists mostly of ordering more pizza after midnight.

After a few initial niceties, the executive leaned across the table to Smith and another lead appraiser who had accompanied her to the meeting and asked, "How much for a Level 2?"

"That's when I got up and left the room," Smith recalls. "The other appraiser stayed. And the company got its rating."

The stakes for a good CMM assessment have gotten only higher since Smith's close encounter with corruption some 10 years ago. Today, many U.S. government agencies in addition to the DoD insist that companies that bid for their business obtain at least a CMM Level 3 assessment—meaning the development organization has a codified, repeatable process for an entire division or company. CIOs increasingly use CMM assessments to whittle down the lists of dozens of unfamiliar offshore service providers—especially in India—wanting their business. For CIOs, the magic number is 5, and software development and services companies that don't have it risk losing billions of dollars worth of business from American and European corporations.

"Level 5 was once a differentiator, but now it is a condition of getting into the game," says Dennis Callahan, senior vice presi-

dent and CIO of Guardian Life Insurance. "Having said that, there are some Level 3 or 4 startups that we might consider, but they have a lot more convincing to do before I would do business with them. They would be at a disadvantage."

With CIOs increasingly dependent on outside service providers to help with software projects, some have come to view CMM (and its new, more comprehensive successor, CMM Integration, or CMMI) as the USDA seal of approval for software providers. Yet CIOs who buy the services of a provider claiming that seal without doing their own due diligence could be making a multimillion-dollar, career-threatening mistake.

That's because software providers routinely

exaggerate their assessments, leading CIOs to believe that the entire company has been assessed at a certain level when only a small slice of the company was examined. And once providers have been assessed at a certain level, there is no requirement that they test themselves ever again—even if they change dramatically or grow much bigger than they were when they were first assessed. They can continue to claim their CMM level forever.

Worse, some simply lie and say they have a CMM assessment when they don't. And appraisers say they occasionally hear about colleagues who have had their licenses revoked because of poor performance or outright cheating in making assessments.

Yet CIOs who want to check up on CMM

rating claims are out of luck. There is no organization that verifies such claims. Furthermore, the Software Engineering Institute (SEI), which developed CMM and is principally funded by the DoD, will not release any information about companies that have been assessed, even though appraisers are required to file records of their final assessments with the institute.

As American and European companies stampede offshore to find companies to do their development work, they first need to understand what CMM ratings really mean. Yet few CIOs bother to ask crucial questions, say IT industry analysts and the service providers themselves. "Not even 10 percent of customers ask for the proof of our CMM," says V. Srinivisan, managing director and CEO of ICICI Infotech, an Indian software services provider that claims a Level 5 certification. "They inevitably take it for granted, and they don't ask for the details."

CIOs who don't ask for the details will not be able to distinguish between companies that



are using CMM in the spirit it was intended—as a powerful, complex model for continuous internal improvement—and those that are simply going through the motions to qualify for business. Buying by the CMM number alone could mire CIOs in the same problems that caused them to look offshore in the first place: high costs, poor quality and shattered project timetables—not to mention the loss of thousands of U.S. IT jobs.

“When you talk about something simple like a number and lots of money is involved, someone’s going to cheat,” says Watts Humphrey, the man who led the development of CMM and is currently a fellow at the SEI. “If CIOs don’t know enough to ask the right questions, they will get hornswoggled.” (For a list of the best questions to ask, see “Twelve Critical Questions,” Page 52.)

Where CMM Comes From

The CMM was a direct response to the Air Force’s frustration with its software buying process in the 1980s. The Air Force and other DoD divisions had begun farming out increasing amounts of development work and had trouble figuring out which companies to pick. Carnegie Mellon University in Pittsburgh won a bid to create an organization, the SEI, to improve the vendor vetting process. It hired Humphrey, IBM’s former software development chief, to participate in this effort in 1986.

Humphrey decided immediately that the Air Force was chasing the wrong problem. “We were focused on identifying competent people, but we saw that all the projects [the Air Force] had were in trouble—it didn’t matter who they had doing the work,” he recalls. “So we said let’s focus on improving the work rather than just the proposals.”

The first version of CMM in 1987 was a questionnaire designed to identify good software practices within the companies doing the bidding. But the questionnaire format meant that companies didn’t have to be good at anything besides filling out forms. “It was easy to cram for the test,” says Jesse Martak, former head of a development group for the defense contracting arm of Westinghouse, which is



DENNIS CALLAHAN, CIO of Guardian Life Insurance, says offshore outsourcers must now have a Level 5 CMM rating to get into the game.

now owned by Northrop Grumman. “We knew how to work the system.”

So the SEI refined it in 1991 to become a detailed model of software development best practices and added a group of lead appraisers, trained and authorized by the SEI, to go in and verify that companies were actually doing what they said they were doing. The lead appraisers head up a team of people from inside the company being assessed (usually three to seven, depending on the size of the company). Together, they look for proof that the company is implementing the policies and procedures of CMM across a “representative” subset (usually 10 percent to 30 percent) of the company’s software projects. The team also conducts a series of confidential interviews with project managers and develop-

ers—usually during the course of one to three weeks and, again, depending on the size of the organization—to verify what’s really happening. It’s a tough assignment for the internal people on the team because they are being asked to tattletale on their colleagues.

“It can be very stressful for the [internal] assessment team,” says a lead appraiser who asked to remain anonymous. “They have conflicting objectives. They need to be objective, but the organization wants to be assessed at a certain level.”

David Constant, a lead appraiser and partner with Process Inc., a software projects consultancy, recalls assessing a company where all the developers had been coached by management on what to say. “I had to stop the interviews and demand to see people on an ad hoc

basis, telling the company who I wanted to speak to just before each interview began,” Constant recalls. “And the sad part was that they didn’t need to coach anybody. They would have easily gotten the level they were looking for anyway—they were very good.”

The new model is much tougher to exploit than the original questionnaire. In 1991, Westinghouse’s Martak recalls telling his management: “This is a different ball game now. If you have a good lead appraiser, you can’t fake it out.” Martak led his group to a Level 4 assessment and eventually became a lead appraiser himself.

The depth and wisdom of the CMM itself is unquestioned by experts on software development. If companies truly adopt it and move up the ladder of levels, they will get better at serving their customers over time, according to anecdotal evidence. But a high CMM level is not a guarantee of quality or performance—only process. It means that the company has created processes for monitoring and managing software development that companies lower on the CMM scale do not have. But it

does not necessarily mean those companies are using the processes well.

“Having a higher maturity level significantly reduces the risk over hiring a [company with a lower level], but it does not guarantee anything,” says Jay Douglass, director of business development at the SEI. “You can be a Level 5 organization that produces software that might be garbage.”

That assessment is borne out by a recent survey of 89 different software applications by Reasoning, an automated software inspection company, which on average found no difference in the number of code defects in software from companies that identified themselves on one of the CMM levels and those that did not. In fact, the study found that Level 5 companies on average had higher defect rates than anyone else. But Reasoning did see a difference when it sent the code back to the developers for repairs and then tested it again. The second time around, the code from CMM companies improved, while the code from the non-CMM companies showed no improvement.

Truth in Advertising

Stories about false claims abound. Ron Radice, a longtime lead appraiser and former official with the SEI, worked with a Chicago company that was duped in 2003 by an off-shore service provider that falsely claimed to have a CMM rating. “They said they were Level 4, but in fact they had never been assessed,” says Radice, who declined to name the guilty provider.

When done correctly, CMM is a costly, time-consuming effort. The average time for a company to move from Level 1 to Level 5 is seven years, and the expense of building a really robust, repeatable software development process with project and metric tracking is many times the cost of a CMM assessment (which alone costs about \$100,000). For small companies short on funds and staff, or startups, forgoing business while building a software process capable of receiving a Level 5 assessment may seem more risky than fudging a number—especially when your customers don’t know enough to ask about it. And mature companies that

Twelve Critical Questions

Only if CIOs ask tough questions will they be able to distinguish between the companies that are exaggerating their CMM claims and those that are focused on real improvement. Here’s the list.

1. WHO WAS THE APPRAISER? How many Level 5 assessments has he done? (If, for example, the appraiser had never evaluated a Level 5 company before, he will not be well qualified to know what a Level 5 company really looks like.)

2. WHAT PART OF THE COMPANY WAS TESTED? “Enterprise CMM” companies may have had 10 percent or less of their projects assessed to get the level.

3. HOW LONG AGO WAS THIS DONE? If it’s more than two years old, chances are it has little meaning because the company will have changed and, in the case of offshore companies, may have grown many times the size it was when assessed.

4. HOW LONG DID IT TAKE THE COMPANY TO MOVE FROM ONE LEVEL TO ANOTHER? If it’s fewer than two years between

Levels 1 through 4, or fewer than one year between Levels 4 and 5, that does not fit with the average. Check the company out further.

5. WHERE IS YOUR EVIDENCE OF CONTINUOUS IMPROVEMENT? CMM Level 5 means continuous improvement—make the company show you its improvement history.

6. WHO RUNS THE QUALITY GROUP? Ask to meet the quality organization that monitors and audits the process, and make sure it isn’t ghettoized. There should be more than a handful of people, and they should have the power in the organization to change things. They should report directly to the CEO, and the company should link the quality system to executive accountability and compensation.

already have a high CMM level may not want to risk the disruption, cost and potential disappointment of getting assessed again regularly.

Officials at the SEI deny that companies are exaggerating or lying about their CMM claims.

"There is no one who will declare 'We are CMM Level 3 as an organization,'" says the SEI's Douglass. "They'll say they are Level 3 in this development center or that product group."

Not true. A quick Nexis search revealed four companies—Cognizant, Patni, Satyam and Zensar—claiming "enterprise CMM 5," with no explanation of where the assessments were conducted or how many projects were assessed, or by whom. Dozens more companies trumpet their CMM levels with little or no explanation.

Indeed, all of the services companies we interviewed for this story claimed that their CMM assessments applied across the company when in fact only 10 percent to 30 percent of their projects were assessed. That's partly because experts say that assessing every project at a big company would be too unwieldy and expensive.

Yet few of those same experts support the

idea that assessing a 10 percent slice of projects—even those considered to be representative of all the different types of work a company does—should lead to claims of "enterprisewide CMM." Vendors argue that there is logic behind these claims. The higher CMM levels (3 and above) require that a company have a centralized process for software development and project tracking, among other things. Since everyone across the company is supposed to use that same process that was used in the projects that were assessed at Level 5, for example, all projects across the company can be assumed to be at Level 5.

But as soon as you dig beneath the surface, the logic falls apart. The process may have changed completely since the assessment was performed. Indeed, Indian services companies in particular, where the most CMM Level 5 assessments have been reported, are growing so quickly—some adding as many as 50 to 60 new developers a week—that avoiding change is nearly impossible. The company also may have changed the types of work it does and perhaps acquired other companies along the way

that were not assessed at any level. And if the company does not have an excellent training program for all its project managers and developers—so they can work at the same level as those in the projects that were assessed—the assessment means little.

CMM is a "snapshot in time," says the SEI, and it encompasses only the projects that were assessed. Furthermore, if the snapshot was taken more than two years ago, most experts say, it will have yellowed so badly that the company is probably no longer at the same maturity level.

Now that CMM has become table stakes for billions worth of business, some believe that providers should bite the bullet and get all their projects assessed if they are going to claim "enterprise Level 5 CMM."

"If I were a CIO and a company was telling me their entire company was CMM 5, I'd want all the people on my project to have gone through the assessment," says Margo Visitation, a Forrester Research analyst and former quality assurance manager at a software development company. "[The service



7. WAS THE APPRAISER FROM INSIDE OR OUTSIDE THE ORGANIZATION?

Internal assessors cannot be as objective as external lead assessors who have no links to the company.

8. WHERE ARE THE REPORTS?

Ask for formal documents that the assessor must provide to the company, most importantly the Final Findings Report (discusses strengths and weaknesses of the company) and, for CMMI, the Appraisal Disclosure Statement (states exactly where, when, how and by whom the assessment was done). If the documents are vague or fluffy, ask for more detail. The company has it. If the company won't let you see the reports, move on. You may have found a cheater.

9. WHAT TYPES OF PROJECTS WERE ASSESSED?

If you're a financial services organization, you want to make sure that at

least one of the projects assessed had something to do with financial processes.

10. DID THE APPRAISER CONSULT ON THE PROCESSES BEING ASSESSED?

Appraisers are supposed to be independent and objective. If they've helped the company develop the processes they are rating, it's a conflict of interest, and they may be tempted to improve the ratings to get their consulting fees.

11. HOW MANY PROJECT MANAGERS WHO WERE ASSESSED AT LEVEL 5 WILL BE ON YOUR PROJECT TEAM?

12. HOW DOES THE COMPANY TRAIN NEW PEOPLE TO BE CMM LEVEL 5?

If the company doesn't train well, it will not sustain its CMM level for long.

providers] are getting millions in business from their CMM levels. Why shouldn't they have all of their developers go through an assessment?"

How Much for That Certification?

Appraisers continue to cheat too, according to their colleagues. The pressure on appraisers, in fact, is higher than ever today, especially with offshore providers competing in the outsourcing market. Frank Koch, a lead appraiser with Process Strategies Inc., another software services consultancy, says some Chinese consulting companies he dealt with promised a certain CMM level to clients and then expected him to give it to them. "We don't do work for certain [consultancies in China] because their motives are a whole lot less than wholesome," he says. "They'd say we're sure [certain clients] are a Level 2 or 3 and that's unreasonable, to say nothing of unethical. The term is called selling a rating."

Will Hayes, quality manager for the SEI Appraisal Program, would only acknowledge one recent case of an appraiser who had his license revoked by the SEI for improperly awarding a company a Level 4 assessment. However, it's difficult for the SEI to know exactly how much cheating is going on because it does not monitor the claims that companies make about CMM.

"Are there organizations out there claiming Level 5 who have never submitted the information to the SEI? I'm sure that there are," says SEI's Douglass. That's little comfort to CIOs who would rather not discover a false CMM claim the hard way—by seeing their projects fail.

There *is* a way to prove whether the assessment was done, but it may be hard for CIOs to get the evidence. Appraisers are required to submit formal documentation of all their assessments to the SEI and to customers. Lead appraisers must write up something called a Final Findings Report that includes "areas for improvement" if the appraiser finds any (they usually do, even with Level 5 companies). But there is no requirement for the content or for-

mat in the reports to be consistent across appraisers or companies. Only the methods for arriving at the final number are consistent. According to one appraiser who asked not to be named, companies will often ask appraisers to "roll up" the detailed findings into shallow PowerPoint presentations that don't give a very good picture of the company and its software development processes. "The purpose of the report is to tell companies where they need to improve—that's the whole point of CMM," she says. "But they make us write these fluff-nutters that can gloss over important details."

The Final Findings Report is what company officials present internally to the big brass and to customers knowledgeable enough to ask for it. But there's no obligation to do it. They can declare their CMM level without producing any evidence. They can even hire their own

lead appraisers inside the company and assess their CMM capabilities themselves. They don't have to hire a lead appraiser from the outside who might be under less pressure to give a good assessment. And they can characterize their CMM level any way they want in their marketing materials and press releases.

SEI officials say they are not in the business of controlling what companies say about their assessments. Nor will they reveal to the public which companies have been assessed or what the assessments consisted of. "We weren't chartered to be policemen—we're a research and development group," Hayes says.

Instead, the SEI exerts control through the relatively small lead appraiser community (approximately 220 are authorized to do CMM assessments). From the beginning, the SEI has reserved the right to discipline or even



RICK HARRIS, director of application development for OnStar, says CIOs who look to CMM for guarantees won't find them.

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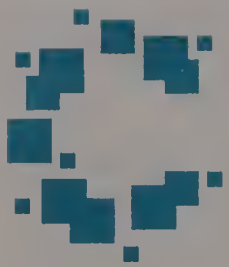
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remove appraisers who cheat or do their jobs badly. But in the early days, the SEI rarely followed through on those threats, say longtime appraisers.

More recently, the SEI toughened up the CMM itself and plans to completely replace it (as of December 2005) with a broader, more in-depth model called CMMI. In the process, it has increased the training requirements and controls on appraisers. According to Hayes, under CMMI, the SEI reviews each appraisal that comes in for irregularities. And under CMMI, appraisers have to file a report called an Appraisal Disclosure Statement that clearly states which parts of the organization and projects were assessed, as well as all the people who took part in the assessment (though assessed companies are not required to reveal that report publicly, either). The SEI, along with the lead appraiser community, is also developing a "code of ethics" for appraisers.

He recalls confronting a manager from one of his CMM Level 5 offshore outsourcing companies who did not know how to do a testing plan for software. "My people had to train him to do it," he says. On another occasion, Harris's staff discovered that the offshore provider had fallen far behind schedule in one of its projects but had not told him. "You'd think a Level 5 company would have told me months before that the schedule was slipping and we needed to do something," he says.

Problems like those can damage CIOs' credibility inside IT and with the business—especially if they used a CMM level to defend a decision to move development offshore or use a particular outfit. As Harris has learned, what matters is what's behind the impressive-looking number. Is there a verifiable commitment to quality, process and training? Can companies demonstrate improvements they've made over time in customer delivery

What matters is what's behind the impressive-looking number. Is there a VERIFIABLE COMMITMENT TO QUALITY, process and training?

Yet if CIOs want to get the true picture about appraisers, to check if they've ever been reprimanded for performing faulty assessments or thrown out altogether for cheating, they are out of luck. The SEI will not reveal any information about errant appraisers.

And the SEI has no intention of becoming a governing body like the American National Standards Institute (ANSI), which controls ISO 9000 certification in the United States. ANSI requires companies to be reassessed every six months if they want to maintain their ISO 9000 certification and reassesses all its appraisers each year. "No one has asked us to become a governing body, and that's not our mandate. And if we did, what would that solve?" the SEI's Humphrey asks. "It wouldn't excuse anyone from doing their homework."

Indeed, CIOs who look to CMM for guarantees won't find them, says Rick Harris, director of application development for OnStar, a division of GM that provides communications inside the company's vehicles.

times, developer productivity and defect density? Will the project managers that went through the assessment be assigned to your project? If the answer to any of these questions is no, then a CMM Level 5 isn't worth much.

There is still no substitute for deep due diligence. "The real test is when you get into the trenches and see whether these companies bring their capabilities to bear," says Harris. "Do their people and processes hold up under pressure? In my experience, in some cases they have and others they haven't." **CIO**

Do you have any CMM stories to share? Send feedback to Executive Editor Christopher Koch via e-mail at ckoch@cio.com.

Learn More About CMM

For more background on the seal of approval for a company's software development process, go to the source: the official CMM website. To find the link, just go to www.cio.com/printlinks.

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The Resource for Information Executives



Senior citizens who belong to AARP protested the group's decision to endorse last December's legislation on Medicare drug benefits (above right). John Sullivan, CIO of AARP, hopes IT can help bridge the generational divide between baby boomers and seniors on this and many other issues.



AARP IS TALKING 'BOUT THAT GENERATION

During the next 10 years, two-thirds of the 76 million baby boomers will be easing into middle age and preparing for retirement. AARP is getting ready.

BY ELANA VARON

IT'S 2:30 P.M., 48 hours after AARP endorsed the controversial Medicare prescription drug bill, and more than 2,000 calls have ripped through its call center in Plantation, Fla. The callers, like the gaggle of protesters who tore up their membership cards outside AARP's downtown Washington headquarters earlier in the day, are furious at the nonprofit organization for supporting the bill, which they believe will benefit not seniors, but drug and insurance companies.

CIO John Sullivan has tried to prepare for the onslaught. His IT staff and AARP's call center contractor have added 30 to 40 people to ensure that the phones are answered and that callers are able to register their opinions. For Sullivan, the fact that so many AARP members get through is living proof that his IT strategy is succeeding. His goal, like that of many CIOs, is to be flexible and to respond quickly to changing business conditions—whether it's demand for a new product or a surge in complaints.

But even the most prescient IT strategy can't anticipate every

Reader ROI

- How AARP is using IT to satisfy its large and diverse membership
- Why the nation's largest advocacy group for seniors is investing in Web services
- How AARP balances the sharing of customer information with privacy concerns

Customer Service

problem. AARP executives decided to deal with the flood of angry calls made directly to its headquarters in Washington, D.C., by telling switchboard operators not to connect those calls. Eventually, the blackout is lifted, but by mid-January, an estimated 45,000 of AARP's 35 million members had quit, and AARP is deep into damage control.

What members seem most incensed about is the notion that AARP gave its imprimatur to the Medicare legislation, which Congress passed in late November, because there's money in it for the organization. It's true that the bulk of AARP's revenue comes from selling or distributing third-party products and services, including insurance policies. But AARP executives say they endorsed the bill because it was important to achieve some sort of prescription drug benefit for seniors. They also say they conducted numerous focus groups and membership surveys before making that endorsement, and they repeat, almost like a mantra, that whatever profits they make are reinvested to provide services to members. All of this, they note, benefits seniors in the long run.

The question is, which seniors? According to health policy analysts, current Medicare recipients who have their own prescription drug coverage and affluent retirees are among those least likely to benefit from the new legislation. This active and vocal group is part of AARP's core constituency—60 percent of its members are aged 65 and older—and they have provided AARP with much of its political power. But AARP also has its eye on an emerging constituency even more powerful due to its sheer numbers—the 76 million baby boomers who are easing into middle age and will begin their retirements during the next decade. According to some surveys, this group expects to be healthier than their parents and is more amenable to the idea that the government cede control of some Medicare services to private companies. They also have nothing immediately to lose, notes Grant Reeher, a health-care expert and associate professor of political science at Syracuse University.

The Medicare debate is emblematic of a conundrum AARP now faces as both an advocacy group and a \$636 million business: how



Ava Baker, AARP's director of member service, wants to use Web self-service to give baby boomers one-stop shopping for their retirement and medical needs.

to balance the needs of its current members with the demands of an emerging constituency and potentially lucrative market. Interestingly, AARP executives are betting \$50 million annually on information technology to help them bridge the generational divide. They have invested in a central customer database that can be accessed both by members and trading partners to provide more timely personal service. They are revamping their Web self-service offerings so that baby boomers can more easily do their retirement planning online. And they are investing in Web services as a way to deploy new applications quickly so that AARP and its partners can offer a greater range of products to members from both generations.

CIO Sullivan travels a lot, and he makes a point of talking to people about baby boomer expectations wherever he goes. From those conversations, he says, one thing is clear: Baby

boomers are more demanding than their parents were. Giving them the personalized attention they want will only benefit everyone.

The Times They Are A-Changin'

AARP's marble-faced headquarters encompasses most of a block in a rejuvenated downtown business district of Washington. Trendy restaurants, boutiques and luxury condos have supplanted many abandoned storefronts and crumbling apartment buildings, but there is scaffolding everywhere: The transformation is not quite complete.

Formerly known as the American Association of Retired Persons, AARP began its own transformation not long after moving into the 10-story building in 1992. The first baby boomers turned 50 and became eligible for AARP membership in 1996. Two years later, the organization dropped its name (along with

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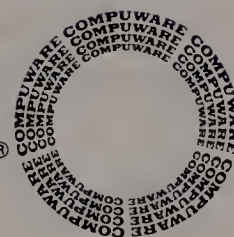
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TIPS ON HOW TO CROSS THE GENERATIONAL DIVIDE

AARP CIO John Sullivan thinks his organization's IT can serve as a model for how to provide personal attention to a large, diverse membership. Here are his secrets.

- 1 Support online transactions.** Only a handful of customers may want these now (less than 10 percent of AARP's members sign up or renew their memberships online), but by investing today, you'll be prepared as demand grows.
- 2 Don't abandon traditional channels.** IT can help make the mail and telephone operations that existing customers prefer more efficient. AARP has deployed an interactive voice response system that allows members to perform simple transactions over the telephone.
- 3 Be flexible.** Store customer data separately from the applications that use it, so it's easy to update information and add new functionality. Connect suppliers to your internal applications with reusable Web services or a portal. Use software that is based on industry standards so that you can change vendors or add new technologies as your needs warrant.
- 4 Have a robust privacy and security policy, and follow it.** A satisfied customer is one who trusts you.
- 5 Stick with what works.** AARP runs its customer database on a mainframe, as it has for years, because the technology is reliable and will support increasing numbers of transactions as membership grows.

—E.V.

the word *retired*) in favor of its acronym. More changes followed: AARP began to offer products, services and information targeted to younger members, such as an online calculator to help people figure out how much to save for retirement. It began producing multiple versions of its magazine *Modern Maturity* for three distinct age groups (the name of the magazine was changed last year to *AARP: The Magazine*). And it started to invest more heavily in IT, developing not only a strong online presence but also revamping its customer databases so that member information can be maintained and secured independently of the numerous IT applications that use it.

And for good reason. Among the many facts AARP has learned about Americans born between 1946 and 1964—their ethnic diversity, relative affluence and sense of individualism and self-reliance—one of the most significant differences between them and their parents is that they are not good at waiting.

When they buy products and services or look for information, they want choices, convenience and control. AARP does not have any direct competition, even though there are other groups at both ends of the political spectrum that lobby on issues important to seniors and provide some modest services. But no one else offers the same combination of community service, information, political advocacy and AARP's now-legendary discounts. Nevertheless, if the benefits of membership aren't easy to access, why join at all?

"[Baby boomers] are looking for one-stop shopping," says Ava J. Baker, AARP's director of member service. A typical baby boomer is working, has children at home, and may also be taking care of aging parents. Whether she is doing research or has a question about her—or her parents'—benefits, she wants information at her fingertips. As Americans live longer, even members who turn 65 are likely to have living parents who need help,

says Baker—another difference between boomers and the older generation.

Furthermore, baby boomers are increasingly wired. A study published in April 2003 by The Pew Internet & American Life Project found that in 2002, 52 percent of Americans aged 50 to 64 had Internet access, compared with 45 percent in 2000. Meanwhile, among respondents aged 30 to 49, a category that includes the last nine years of the baby boom, 47 percent said they are current Internet users, while more than half of the rest said they would go online eventually. Their experience working, shopping, investing, planning trips, doing research and communicating online has already carried over into a demand for transacting business with AARP on the Web. Although seniors aged 65 and older use the Internet the least, the number of people in this age group who are online is increasing as well. AARP's own data shows that about 16 million of its members have regular Internet access. "The percent of members who want to interact that way is increasing at a healthy rate," says Tony Habash, director for IT strategies and solutions at AARP.

It is already possible to interact with AARP electronically on several dimensions. Members can sign up and renew their memberships on AARP's website. Almost 100 message boards provide forums for members to discuss just about any subject. Hundreds of messages flew back and forth on AARP's policy message board recently as members debated the merits of the Medicare bill. And through a partnership with nonprofit online service Volunteer-Match, AARP helps members sign up for hundreds of volunteer activities nationwide.

If you purchase an AARP-sponsored insurance policy, you can get rates quoted online and download applications. In what has become a staple of political advocacy, you can sign up for alerts about upcoming votes on congressional legislation and use an online tool to generate and send an e-mail to your congressman about an issue.

"Right now, we're like any other organization in the U.S. when it comes to providing online services: We let members do a few transactions," says Sullivan, who has a bigger vision in mind.

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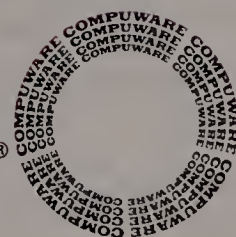
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Customer Service

This year, for instance, AARP plans to launch a new system that will help aging baby boomers plan for their future medical needs and how they will finance them. From surveys and website statistics, AARP executives have learned that health information and products relating to health care are among the top interests of members.

One of the organization's biggest challenges is making sure the website has something for everyone. "We can't make a decision that we're only going to worry about the people buying health care or home or auto insurance products," says Mark Carpenter, AARP's director of Web operations. "Everyone pays their \$12.50 a year, and that entitles them to a certain amount of access." Younger members might spend a little time online conducting a transaction, but when older members do get online, they spend a lot of time using the site to get involved with the organization.

An early effort to enable personalization on the website "didn't work so well," says Carpenter, because it relied too much on the members to define their own interests. Now Carpenter is working on an "Amazon-type" approach to deliver information based on what visitors do on the site, rather than asking them lots of questions about what they want. If you search for information about Medicare, AARP might serve up some related articles for you to read or a link to its health insurance products.

"Gotta Keep the Customers Satisfied"

Inside, AARP's offices are a warren of corridors and cubicle pods coated and carpeted in a soothing gray. As in most office buildings, visitors can't wander around without an escort, but here even employees sometimes have trouble finding exactly who they are looking for. The building is arranged around two stovepipes: elevator banks that serve Building A and Building B. The IT department is on one side. The executives who run AARP's health-care programs are on the other.

For years, its customer data and systems were similarly stovepiped.

And for members of any age, that can, at worst, be traumatic. A husband dies, and his



Mark Carpenter, AARP's director of Web operations, says the website has to appeal to both younger baby boomers and senior citizens who don't want as many bells and whistles.

wife calls AARP to cancel his membership. But the message doesn't get to Scudder Investments, through which he bought an AARP-branded mutual fund. Soon, a few marketing solicitations come for him in the mail, and the grieving widow has to make another phone call. Ideally, says Sullivan, member data should be integrated so that the widow can end the painful mailings with a single call. "It is a small thing, but if you do small things well, it's just going to improve the process of aging for our members," he adds.

It turns out that taking care of such seemingly small details can be addressed with IT investments that solve some bigger problems—like how to support a multifaceted business model or keep costs down. During the past two years, AARP has deployed a central membership database that is continuously

updated, making it easier for the organization to market products and services to its members. Establishing common interfaces to this database for its suppliers, through a Web portal and using Web services, also makes it less expensive for the group to maintain links with suppliers or change its mix of services.

AARP already offers dozens of services from third parties, which have stiff competition to be allowed to offer an AARP brand. While AARP has traditionally inked long-term contracts with suppliers, that's starting to change as industry practices evolve and members look for more choices. For instance, AARP Services, a wholly owned, for-profit subsidiary that manages AARP's third-party services (and returns its profits to the parent organization), is planning to renegotiate a series of 10-year contracts with five health

insurance providers as three- to five-year deals. Noelle Ronald, the division's director for member health products, says the shorter contract terms will allow more flexibility to negotiate new terms or rebid the contracts.

Up till now, AARP has coded data exchanges separately with each of its service providers, a slow and expensive process. Now, CIO Sullivan's team is deploying a set of interfaces to its applications based on Web services that will speed integration with suppliers and enable AARP to improve its customer service. The first iteration of the interfaces is currently being rolled out by AARP's contact center contractor, Precision Response. When a member calls, writes or e-mails with a question or complaint, Precision Response will be able to use Web services to access AARP's applications, change someone's address or look up information about a service she uses. In the future, this

brokers, says Suzanne Hall, AARP's director of IT assurance and security.

The organization tries to control spam through a "double opt-in" process, through which members have to confirm they want any information they've signed up to get. AARP also has set up procedures to verify that its service providers aren't violating agreements not to send junk mail. In addition, AARP also requires its partners to comply with its security practices, and it does its own testing of suppliers' networks to confirm they are following these procedures. "We rely on our own security to ensure that we're only giving them data that's appropriate for them to receive," Hall says.

Takin' Care of Business

From most places in central Washington, there is some icon of democracy within sight. Live and work there long enough, though, and the

always, for instance, rewarded its executives handsomely (in the wake of the Medicare debate, Executive Director and CEO William Novelli has been criticized by some members for taking a \$420,000 salary).

AARP executives acknowledge that their need for revenue to support activities that don't make money results in "an interesting dance, sometimes," as Web Operations Director Carpenter puts it. When it comes to IT, some decisions, such as how much to invest in integration with a service provider, are made based on how much revenue AARP will get from the deal. But not every investment decision comes down to whether AARP will make money from it. Some projects, such as the deployment of a new system that will scan, sort and route paper mail, are tied to customer service goals that are independent of whether a member purchases AARP's products. Baker, the member services

AARP's reliance on revenue from insurers and other suppliers has frequently left the organization open to charges that its leaders do what is best for AARP, rather than for its members.

interface will enable AARP to change its mix of products and services as the need arises, with less work for the IT department.

Having a standard way to integrate applications with its membership database will also make it easier for AARP to communicate updates about its members to internal and external marketers. (AARP's privacy policy acknowledges that suppliers may purchase access to the membership database, but they are required to keep membership information confidential.) AARP does not sell its membership data to telemarketing companies or list

view can fade behind the daily grind. Sullivan says he was reminded of this recently when a friend pointed out a view of the Capitol's dome from a steep hill halfway up North Capitol Street. Yet for years Sullivan drove into work day after day without registering that sight.

In much the same way, it's easy to lose sight of the fact that AARP is a big business.

According to its most recent financial statement, the organization collected \$257 million in royalties and other income in 2002 from the products and services it sells or brands to members. Another \$76 million came from advertising in its publications. Only 29 percent of its revenue comes from members. AARP reported a \$15 million profit, which the statement says partially recouped a \$23 million investment in its statewide operations the previous year. AARP's reliance on supplier revenue has frequently left the organization open to charges that its leaders do what is best for AARP, rather than for its members. It has

director, says she needed a better way to funnel members' questions to appropriate people for a response. "Our members have a tendency to write questions on their renewal [forms]," she says. Meanwhile, Hall notes that AARP's attention to privacy and security is related to its education and advocacy programs that aim to combat predatory marketing practices that victimize seniors.

IT provides the stage from which to manage this complex choreography, one project at a time. "Whether it's 76 million baby boomers coming or 35 million existing members, we serve a large audience," says Sullivan. "By making incremental gains [in service delivery] across a wide number of industries, we can affect the marketplace and improve the lives of our members." **CIO**

Senior Editor Elana Varon writes about the financial industry and public policy. E-mail her at evaron@cio.com.

Talk to John Sullivan

It's a question of balance. For John Sullivan, CIO of AARP, it's the fine line between sharing information with his business partners and safeguarding members' privacy. How does he do it? Get the answers straight from him when you **ASK THE SOURCE**. Sullivan is available online through March 14. Go to www.cio.com/experts.



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It's commonly believed that the more time we devote to a project, the better the results. Not so. Wharton professor Maurice Schweitzer tells Senior Writer Stephanie Overby how CIOs can correct "input bias" and stop confusing quantity with quality.

Bias Be



Advertisements get under

the skin of professor and human behavior expert Maurice Schweitzer. There's the beer commercial that brags about its slow brewing process. And the billboard from a luxury car manufacturer that boasts about how its engineers haven't taken a vacation in years. "Three hundred thousand people vacationed in the south of France last year, and none of them was a Lexus engineer. Who cares? That's not very informative to me," says Schweitzer. "And I'm not drinking a beer because of how long it was in a vat. I drink it because of how it tastes."

ware

Schweitzer, who specializes in behavioral decision research as assistant professor in operations and information management at the Wharton School at the University of Pennsylvania, uses these advertisements as examples of what he calls "input bias." According to his research, people automatically associate input related to quantity (how long it takes to make a car) with output quality (how well it performs). While in many cases, input information does directly correspond to outcome, in some cases it does not. Yet humans are hardwired to automatically associate input and output. And people can prey on your input bias, causing you to make poor decisions or judgments to their advantage.

It's no surprise that advertisers exploit this basic fact of human nature. But CIOs, Schweitzer says, fall victim to the same input bias. Employees, vendors and fellow business leaders all take advantage of these natural biases in manipulating IT decisions. Fortunately, as Schweitzer told *CIO* Senior Writer Stephanie Overby in a recent interview, there are ways to guard against making mistakes based on bias.

Maurice Schweitzer, a professor at the Wharton School, translates a deep understanding of human behavior into practical advice for business decision making.

CIO: Can you explain what your research has revealed about input bias—that is, how information on the quantity of something is often misused to infer quality?

Maurice Schweitzer: In general, input quantities are positively related to the quality of outcome. The more you invest in a project, the better that outcome will be. Companies that spend a lot of money on R&D typically produce the most innovative products. The more time an employee spends in the office, the more productive she is. Students who study the most do better on exams. It's a natural assumption that's usually right.

However, there are many cases where that direct relationship does not exist. For example, people assume that longer hospital stays are better and propose legislation that women who give birth should spend a certain length of time in the hospital. They figure the longer you're in the hospital, the better care you'll receive. But in fact, there are so many sick people in a hospital that it's actually not a great place to be unless you have to be there.

We live our lives mostly on automatic pilot, and we have heuristics—decision rules or shortcuts—to make a lot of our decisions. Assuming that input quantity directly correlates to outcome quality is one of those. These heuristics can lead us astray. There are times when we need to step back and give decisions some extra attention. That means participating in a deliberate thought process that takes our natural biases into account.

Certainly we all use a lot of shortcuts in making decisions every day. Why is the input bias particularly dangerous?

It's a social bias that relies on information from people around you and is thus much more dangerous because people can manipulate you. The classic example is face time. Someone puts in a lot of time in the office; you assume they're working hard. Or he says, I had this many people working on this project, or This program I created has so many lines of code. He's giving you some measure of the input in a way that

might skew your judgment of the outcome.

The input information they give you may be accurate. But of particular importance to managers and business decision-makers is the fact that people can manipulate or misrepresent input to prey on this bias.

It's obvious that a vendor trying to sell you a software product might take advantage of the input bias. But are employees really that manipulative, or is it simply an ingrained part of corporate culture?

Sure, organizational culture is part of it. But people really are that manipulative. Think about the concept of people overstating expense reports. Does that really happen? Yes. And it's even more subtle than that; it's about creating impressions. I have students who come up to me and say they spent five hours in the library working on a project, or they studied for a week for my exam. Those measures shouldn't matter. I'm interested in how well you did on the test, not how many hours you spent staring at the book. But people will convey that information nonetheless. And even if you know it doesn't matter, it still has an influence on your judgment of the outcome.

What are some instances in which CIOs would likely rely on irrelevant input information?

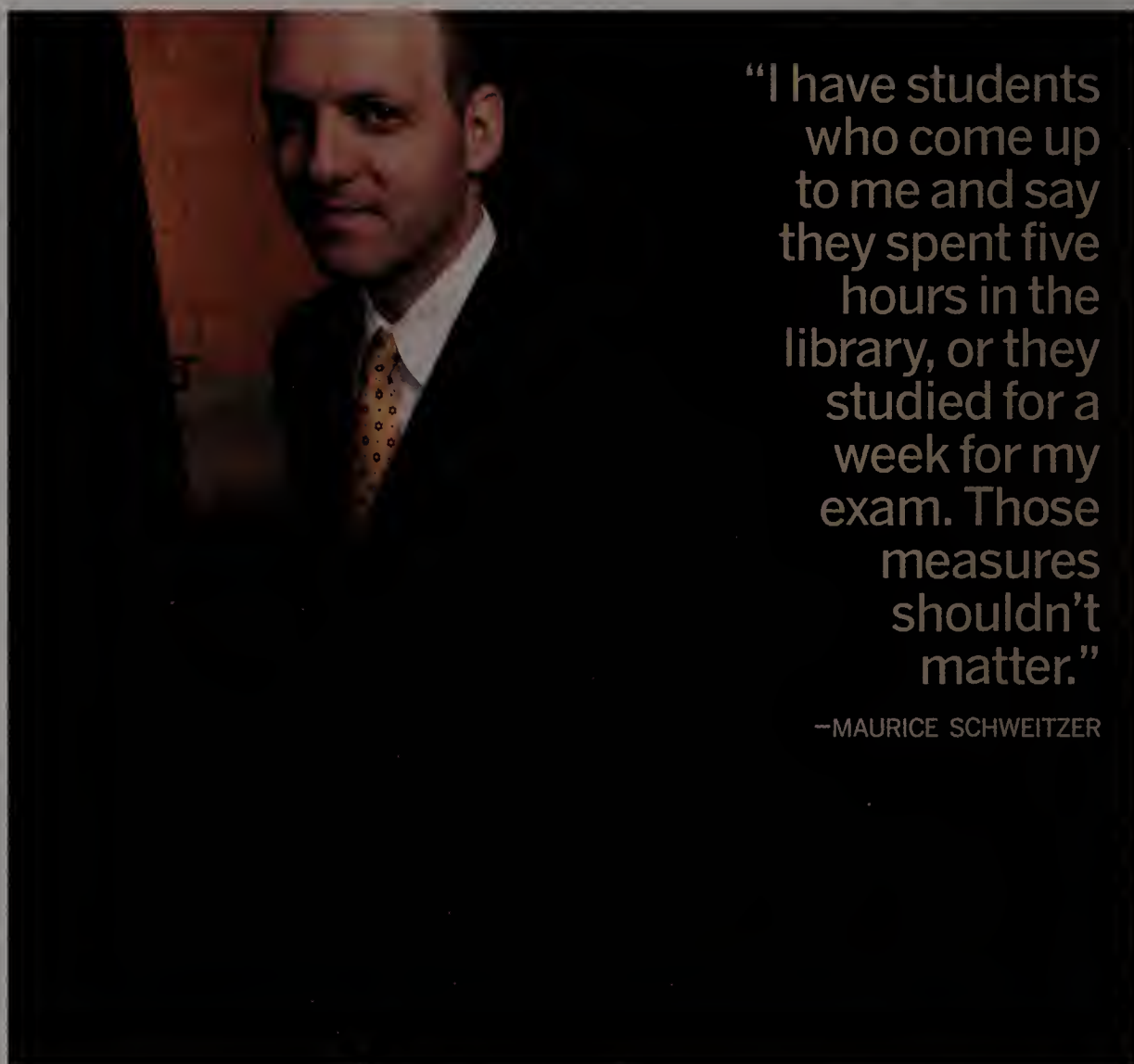
In one of our experiments, we submitted two presentations on emerging technologies to [college students]. They saw two videotapes of someone describing a new technology they knew nothing about. With each presentation, we told half of the group that the presenter had spent a long time preparing the presentation, and the other half that he had spent a shorter time preparing. After viewing the tape, they judged the quality of the presentations along several different dimensions, and with every one, they gave higher marks when we told them the presenter had put in more time. What was surprising was that even when they indicated that they knew the preparation time didn't really matter, they still were influenced by it.

People's judgments often depend on how easy it is to evaluate something. If it's easy to measure the outcome, we may not rely on input measures. If someone is performing in

the Olympics, their time is a clear measure of how they did. But in other cases, such as judging how innovative a pharmaceutical company is, it's harder to reach a decision. So you might rely on whatever objective measures are available, such as how many patents the company has. But in reality, that's not a good measure because more patents are filed for small modifications of existing compounds, and there aren't really that many big blockbuster drugs involved.

that would be a better measure for them. But if they are comparing packages that perform different kinds of tasks, that's hard to do, so they rely on things they can actually measure.

Similarly, when judging employee performance or interviewing job candidates, CIOs may rely on whatever objective measures are available, relevant or not: how much face time employees put in, how many hours they spent on a project. But that's not really what CIOs should care about.



"I have students who come up to me and say they spent five hours in the library, or they studied for a week for my exam. Those measures shouldn't matter."

—MAURICE SCHWEITZER

OK, so how are CIOs influenced by input bias?

A CIO may need to judge the innovativeness of a technology company. They might rely on quantitative input information such as R&D expenditures. But that may not be the best indication of innovation.

In judging the quality of a software package, they might look at the number of lines of code in a program. But that's not really what they should care about—it's whether the program is effective. If they could measure speed at which a program could complete a task,

Are you saying that even when faced with a really rotten employee or a project that's tanking, CIOs can be fooled into thinking the outcome is better than it actually is based on input like face time or the number of people working on a project?

No. If something is really bad, input bias isn't going to work. In one experiment, we offered people two samples of iced tea. In one instance, we asked people to compare normal raspberry and lemon iced teas. We told them one was made with an expensive machine and

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one was made with an inexpensive machine. We got the same results we did with other experiments: Input bias mattered, and most participants rated the tea made with the expensive machine a better tea. We conducted the same experiment with the same teas, but we added lime juice and salt to them. They were really terrible. For the bad teas, they didn't care about the expense of the equip-

ment used to make them. They were just bad. People tend to think more critically when they experience a low-quality outcome. It shocks them into being much more careful and calculative. When a CIO encounters a bad outcome, he will go off automatic pilot and make judgments based on quality. If you have an employee who's just a disaster—even if there's high input—it's not going to help. If there's a software product that keeps crashing, you can't sell it based on input measures.

ment used to make them. They were just bad.

People tend to think more critically when they experience a low-quality outcome. It shocks them into being much more careful and calculative. When a CIO encounters a bad outcome, he will go off automatic pilot and make judgments based on quality. If you have an employee who's just a disaster—even if there's high input—it's not going to help. If there's a software product that keeps crashing, you can't sell it based on input measures.

You say the more accountable people are for their decisions, the more likely they are to rely on irrelevant input. Please elaborate.

It comes down to the issue of justifiability. If you have to justify your decisions to someone else, tell someone why they were passed up for a promotion or explain to your board why it should invest in a certain system, you're more likely to rely on input measures because they give you some justification for your decisions.

So what can CIOs themselves do to safeguard their own decisions from irrelevant input information?

People are most deliberate in decision making when the environment around them is quiet, when they are at rest, when they're not under time pressure. Those are situations a CIO is rarely in. CIOs are very busy, and they are likely to be on automatic pilot most of the time. They have to be very careful to identify situations in which their decisions are really

important. You can stay on automatic pilot when deciding which bowl to use for cereal or what tie to put on. When it's something that's important—when it's a major decision—they need to set aside time to be deliberate and careful in order to make an unbiased decision.

That really speaks to the psychology of the input bias. This is something that is hardwired in our cognition as human beings. We can dis-

engage from it and be very deliberative in our decision making, but it's hard. It doesn't come naturally. We're all much weaker mentally than we think.

Might CIOs and IT managers inadvertently encourage the manipulation of the input information?

Yes. CIOs need to take a look at how their incentive systems are set up. Law firms reward people for the number of hours they bill. The incentive isn't to be the fastest. IBM used to reward people based on the number of lines of code they produced when, in fact, programmers actually might be more efficient by producing fewer lines of code.

Instead, you need to create an evaluation system that measures what you actually want and reward employees based on that. In the case of programmers, you would want to look at objective measures of their work (how fast the code performs a particular computation, how often it crashes, how much memory it takes) and assess those criteria. If objective measures are too difficult to construct, you might have a manager familiar with the program judge the outcome. Or, if the programmers' project is complete, you could go "downstream"—to look at customer satisfaction or adoption.

What can CIOs do to correct the input bias?

Suppose someone is trying to sell you software. You have software package A and soft-

ware package B. Both companies make their pitches. The CIO can then assemble a panel of employees to test out both software packages. These individuals will not know as much about what the inputs are: how many lines of code there are, how long the software engineers worked on it, how much money it cost to produce. That irrelevant information is stripped out. The CIO himself may have input

information, and some of it may be relevant. But the review process helps to mitigate the overreliance on input.

Or suppose you have someone coming up for a promotion. You'd like to have a diverse panel of people who can judge the quality of his work. These people might be more likely to evaluate the person's accomplishments without information such as how much time he spends in the office or how hard he appears to work. Again, in some cases, you may want someone who works very hard, even if they're not having any success yet. CIOs just need to make an effort so that they don't put an inordinate amount of weight on input measures that may not matter.

When it comes to justifying decisions, what can CIOs rely on rather than input measures?

When they implement these kinds of processes, they can truly focus on the merits of a piece of software. The advantage of using a panel of employees to review different products is that once the employee panel makes a unanimous recommendation for product B, CIOs can use that conclusion as their justification. What's important is often the speed at which your algorithm solves a problem, or how the end user rates the product in terms of its interface. Those are the measures CIOs want to look at. **CIO**

Senior Writer Stephanie Overby can be reached via e-mail at soverby@cio.com.

If you're trying to choose between two software packages, it might make sense to have both tested by employees who don't know how long the software took to build or how much it cost to develop—the kind of input data that could bias their judgment.

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HOW TO HIRE

Hiring the right people for your IT organization is not an easy job, nor an exact science. We'll show you how to identify the candidates with the right attitude. BY MERIDITH LEVINSON

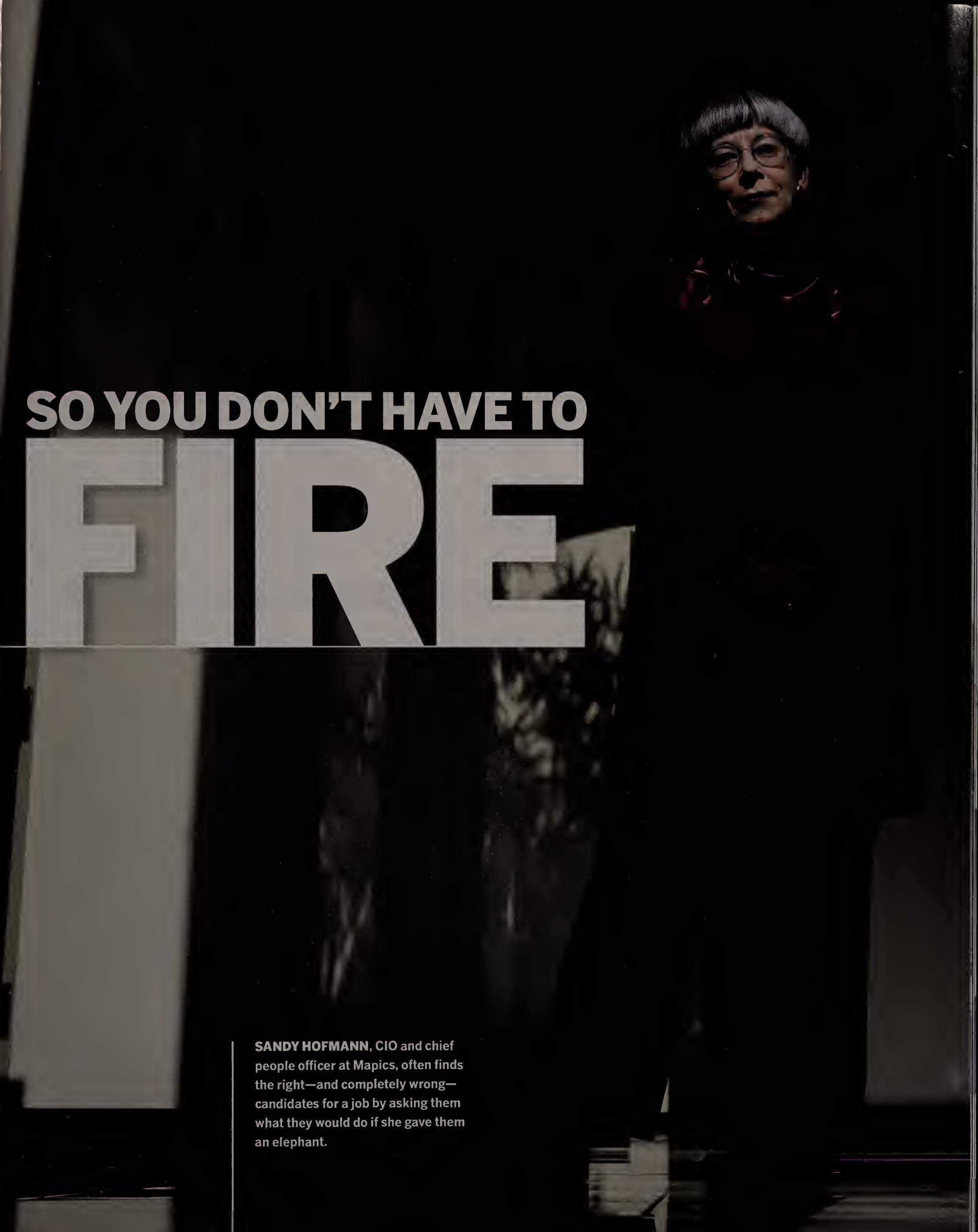
After three weeks of rigorously screening candidates, Sandy Hofmann, CIO and chief people officer at Mapics, hired Chris White (not her real name) for an IT management position at the manufacturing software vendor. White was responsible for leading a team of six individuals and for overseeing one of the company's technology functions. Hofmann was convinced White was the right person for the job. After all, she had worked in environments similar to the one at Mapics and had solved technical problems similar to the ones the vendor was facing. White also had good references, who assured Hofmann that White was assertive, positive and capable. She made a good impression on each of the Mapics employees who interviewed her, and she got HR's seal of approval.

But it wasn't long after White was hired that Hofmann began to realize she had made the wrong choice. White didn't stand up for her subordinates. Instead, she blamed her own failures on her direct reports. She was condescending toward older workers. And she didn't make her direct reports feel welcome or comfortable when they came to her for direction. "We have very high expectations of our managers," says Hofmann. "If a manager can't care for the people in their charter, it puts the company's ability to be successful at risk." Three months after White came on board, Mapics showed her the door, and Hofmann had to commence the costly and time-consuming hiring process all over again.

In spite of their apparent due diligence, many CIOs still miss the mark when trying to find the right person for a job. Oh sure, they know the qualities that a new hire should possess:

Reader ROI

- ▶ How to assess a candidate's answers to your interview questions
- ▶ Ways to determine who's got the right attitude for your organization
- ▶ How to get useful information from your candidates



SO YOU DON'T HAVE TO FIRE

SANDY HOFMANN, CIO and chief people officer at Mapics, often finds the right—and completely wrong—candidates for a job by asking them what they would do if she gave them an elephant.

They want someone who's passionate about her work, eager to learn, open to new experiences and plays well in the corporate sandbox. Those are all traits that indicate a good attitude. Hiring is such a crapshoot because CIOs don't know how to determine whether the suit sitting in their office really possesses the characteristics they're seeking and is all that she claims to be. Further complicating the process is that prospective employees are always on their best behavior, and CIOs can no longer rely on references to vet candidates, since legal departments are increasingly advising companies not to provide references for liability reasons.

Indeed, Peter Cappelli, a professor of man-

agement at the Wharton School of the University of Pennsylvania, says that most companies are so bad at finding the right person for a job that they have no idea whether their hiring process is effective. But, he adds, "you don't have to do much to make huge improvements." That's good news for CIOs, who've been more occupied during the past three years with layoffs than with recruiting. As the economy rebounds, they will have to start polishing their rusty interviewing skills and become masters of evaluating candidates' dispositions and suitability for a position. To help you in this endeavor, we have compiled three methods for assessing a person's attitude and making sure you get the right person for the job.

ALL THE RIGHT QUESTIONS

Too often hiring managers focus on a candidate's skills and qualifications rather than on who he is or his personality, says Dick Grote, president of Grote Consulting, which specializes in performance management. "The focus of our selection is on whether an individual can or can't do a job. We ask, 'Where did you go to college? How much experience have you had?'"

That is not to say that CIOs shouldn't test a candidate's knowledge or ask about his professional experience. But they *should* stock their interviewing arsenals with the types of questions that will help them identify if someone's personality and attitude is right for the

I Can't Believe He Said That!

Outrageous responses to CIOs' interview questions

QUESTION

ANSWER

ANALYSIS

BETTER ANSWER

Do you have any questions about the job?

Can I get an advance on my first paycheck?

This person is not looking to contribute to the company but is looking for us to contribute to her.

Why did the last person who was in the position leave?

What are you looking for in a job?

A nice quiet place to work where no one bothers me.

Then why are you applying for a job in IT?

An opportunity to exercise the skills I've gleaned over the years while also tackling new challenges.

From Sandy Hofmann, CIO and chief people officer of Mapics

Where do you want to go in your career?

I really want to be the head of a bigger organization.

If I hired this person, they'd be more concerned with getting to the next level than with their current job.

I want to work for a company where I can roll up my sleeves and have a real impact on the company's product and brand.

Why do you want to leave your current job?

I've done as much as I can do there, and I'm looking for the next opportunity.

This is B.S.

Anything that smacks of the truth, even if it is, "I couldn't stand my old boss."

From Christopher Hjelm, CTO of Orbitz

How would you tell a senior vice president that your project is multimillions over budget and doesn't work?

I'd let you do it.

Next!

I'd give it to him straight. And I'd assure him that my staff and I would audit the project to find out what went wrong so that we could prevent it from happening in the future.

From Tracy Austin, CIO of Mandalay Resort Group

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Staffing

position they're looking to fill. (Learn how to assess personality based on sample answers in "I Can't Believe He Said That!" Page 74.)

Bear in mind that these questions aren't necessarily traditional. For example, Mapics' Hofmann asks, What would you do if I gave you an elephant? (Interestingly, however, she did not ask Chris White that question.) One candidate interviewing for a customer support position said he'd slaughter the elephant and eat it. This response suggested to Hofmann that the candidate lacked the warmth necessary for helping customers. Another candidate said she'd learn how to care for the animal and provide it with food and water until she could find it a suitable home. This response, indicative of the candi-

date's empathy, told Hofmann that she'd found her customer support specialist.

Brian Kautz, CIO of Arnold Logistics, typically asks candidates to describe their dream job. "The answer gives you insight into the person and the types of things they like," he says, adding that CIOs should be wary of candidates who start describing the job for which they're applying. This can suggest that they're disingenuous, focusing on their own agenda instead of on what's being asked of them.

John Sullivan, a management professor at San Francisco State University, says you can use a person's answer to the dream-job question to determine whether the characteristics they're looking for match the job you're offer-

ing. If there's a match, you may have a winner. If not, you will probably want to move on to the next candidate. For example, if your corporate environment is cutthroat and internally competitive, and you have a candidate who describes his dream job as one that challenges his intellect, rewards his contributions and his colleagues subordinate their personal agendas for the benefit of the company, he's probably going to be unhappy working for you.

In addition, when you ask about skills and experience, make those questions as pointed as possible. Frequently CIOs ask unspecific, uninspired questions that they've been asked in the past, like, Tell me about a project you worked on. What went well? What didn't? What do you expect from your manager, and what should your manager expect from you? These questions elicit canned answers, and interviewees often respond by telling you what they think you want to hear, thereby not revealing their true personality.

Instead, ask questions specific to the role they'll be playing in the organization. When hiring for a leadership position, ask candidates if they've ever fired anyone, says Mark Zimmerman, vice president of IT at Gevity HR. If a candidate has been in that situation, ask why and how she handled it. If, for example, the candidate says that she first sought HR's advice to ensure she wasn't violating any policies or making herself vulnerable to a lawsuit before telling the employee in the privacy of her office that the person's performance was negatively affecting team morale and that the employee would need to move on, then you know the person is capable of handling sticky situations in a methodical, professional manner. On the other hand, if the candidate answers that he'd simply tell the employee that she's unsuitable for the position and hand her a pink slip without ever having reviewed the performance, the individual's response indi-

BRIAN KAUTZ, CIO of Arnold Logistics, uses a personality assessment test called the Predictive Index to create job ads that state the types of characteristics needed for a position.

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Staffing

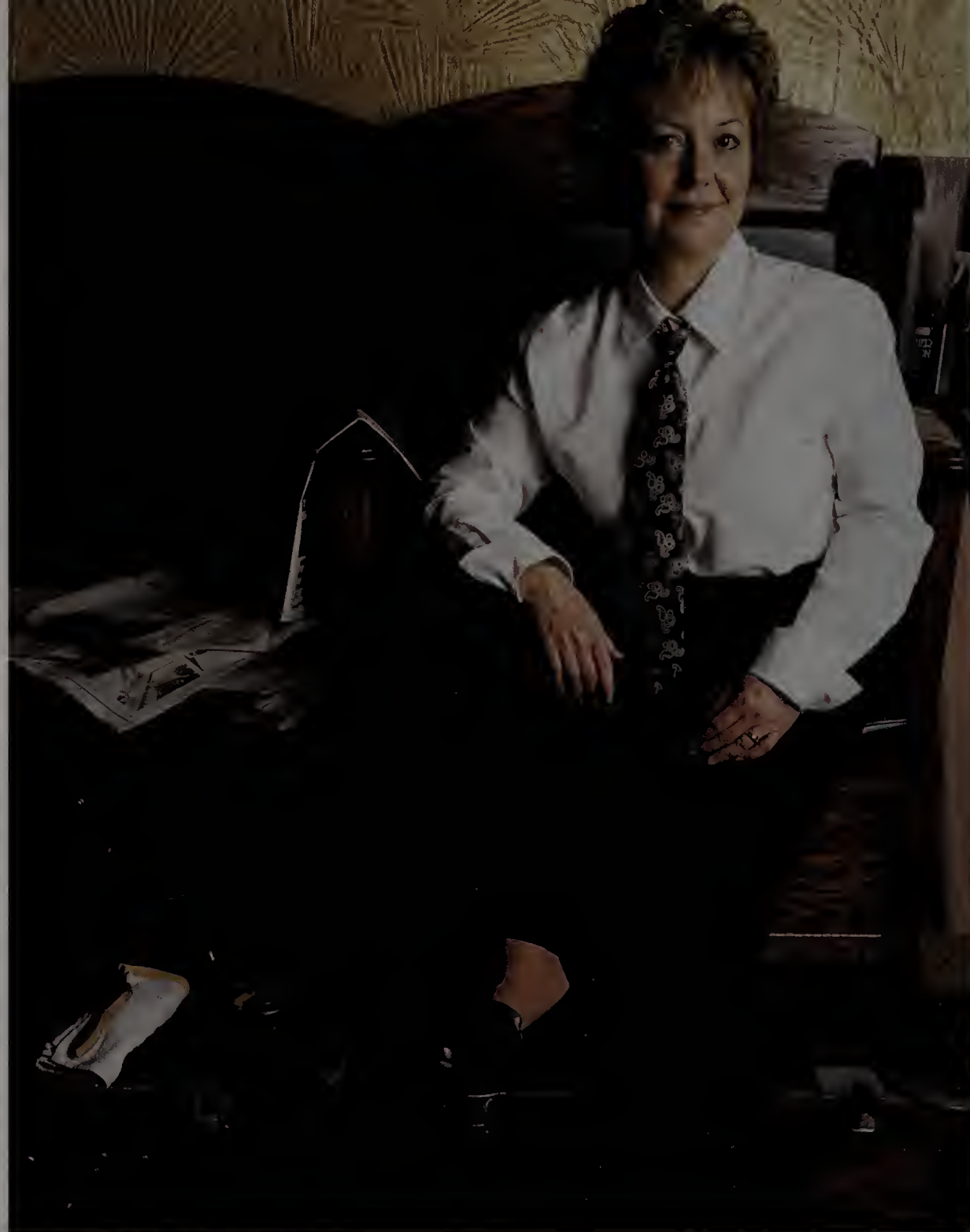
cates a lack of sensitivity and experience.

When hiring for a project manager position, Tracy Austin, CIO of Mandalay Resort Group, suggests asking candidates how they would tell a senior vice president that a critical IT project is multimillions over budget and doesn't work. Austin says a prospective employee once answered that question by saying, "I'd have you do it." Austin instantly knew this person didn't have the nerve required for the job. A better response would have been to be frank about the problems, identify what went wrong and come up with a solution for either getting the project back on track or for preventing the company from losing any more money on the project.

TRY BEHAVIORAL ASSESSMENTS

While judging personality may well be the most critical component in determining whether someone is right for a job and for your IT organization, it's also the most elusive factor to identify. Some CIOs, like Arnold Logistics' Kautz, use behavioral or personality assessment tools to measure a person's fit for a job. Kautz has had success with a Web-based tool called the Predictive Index (PI), having hired six people with the tool since 2001, all of whom still work for him. Other personality assessments are The Big Five, which measures five facets of personality (conscientiousness, neuroticism, agreeableness, openness, and introversion or extroversion), and the Minnesota Multiphasic Personality Inventory, a more controversial test used to diagnose and treat personality disorders, and administered most often for lower-level employees.

Developed in the 1950s, the PI provides information about the working conditions that are most rewarding to an individual and that make the employee the most motivated and productive (see the test at www.piworldwide.com). When administered on a computer, the PI consists of two separate screens. The first lists 86 adjectives, including sophisticated, earnest, self-starter, loyal, passive, persuasive, obstinate and charitable. The individual taking the PI is asked to select as many adjectives from the list that describe the



TRACY AUSTIN, CIO of Mandalay Resort Group, suggests trying to hire people you know. She did that recently for a director position, bringing in someone she had worked with previously in a consulting relationship.

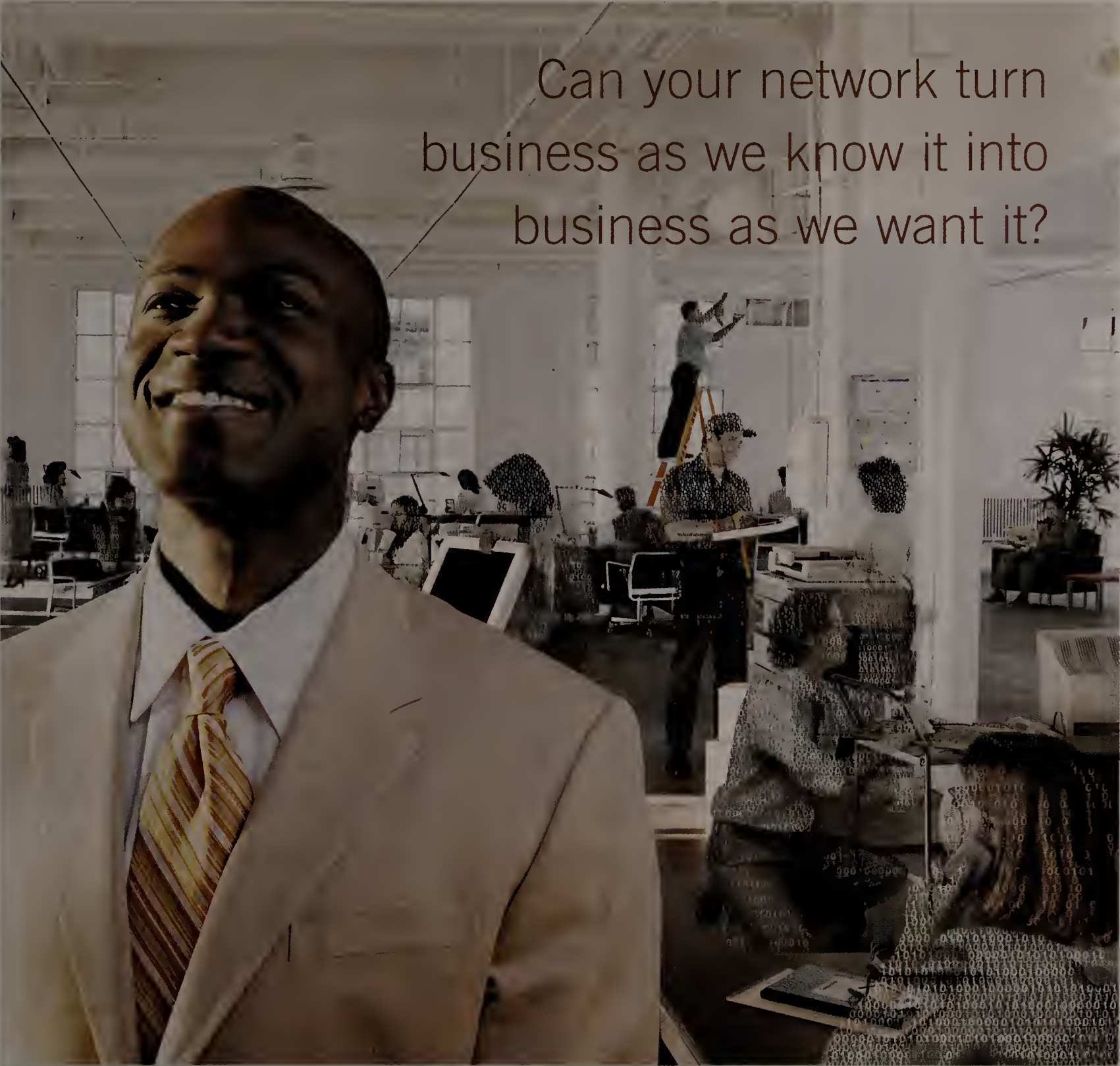
way he thinks others expect him to act. The second screen contains the same adjectives and asks the person to check off those that he thinks describes himself. The PI measures a person's optimum working conditions by comparing what he checks off on the first screen with what he checks off on the second screen.

Kautz admits to being a skeptic when his company first used the Predictive Index. He begrudgingly began administering it simply because it was a corporate initiative. He thought it would create a homogeneous organization of drones who never disagreed with one another. The fact was, Kautz didn't understand the purpose of the PI, which is predicated on the notion that organizations need to be diverse because different positions

require different personalities and behaviors.

As he learned to use the test to his advantage, however, his skepticism waned. He found he was able to improve the quality of his hires while spending less time interviewing. Before he started using the PI, his hiring decisions rested solely on a candidate's skills and experience. Because the PI makes behaviors measurable, he now has a sound way to compare the required behaviors with a potential employee's actual behaviors.

Kautz uses the PI to create job ads that state the type of person and characteristics that are needed for a position. He gives people in the position for which he's hiring and others who interface with that position a form called a PRO (Performance Requirement Options),



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which includes an extensive list of activities such as sitting in front of a computer for most of the day and delegating authority to subordinates. He asks them to choose the most frequently performed activities. The PI translates those activities into behaviors and charts them. For example, if coworkers check off delegating authority, talking persuasively and selling ideas, those activities indicate that the job requires someone who's extroverted and possesses an intuitive sense of other's feelings. Kautz can then write in his ad that he's looking for extroverted, intuitive people.

He also uses the PI to screen candidates. For a systems analyst position that he needed to fill, he wrote a job description based on data he obtained from the PRO that noted, among other things, that the person applying had to be capable of multitasking and working in a fast-paced environment. After screening résumés and determining which applicants had the skills, he e-mailed them a link to the PI. When he received their results, Kautz matched them to the PRO. Kautz interviewed those candidates whose PI results most closely matched the PRO, and he hired the person who most closely matched what he was seeking.

The PI also helps him identify smooth talkers and those who respond to questions with answers they think will net them the job. One time when Kautz was hiring for a leadership position that required a lot of interpersonal work and direct management of small teams, he interviewed a candidate who looked great on paper and made a good impression during the interview. He answered questions about leading teams well. Meanwhile, however, his PI results indicated that he was passive and therefore might not possess the necessary characteristics. So Kautz probed deeper and asked the candidate how he would deal with confrontation and having to fire someone. After a few of these questions, the candidate realized he wasn't right for the job. Kautz then discussed with the candidate other positions more in line with his personality.

Finally, the PI helps Kautz speed the interviewing process. Before he started using the PI, he says, he interviewed more candidates and had to ask more to return for second inter-

Determining Fit Through Specific Questions

IF THE IDEA of psychological or behavioral assessments makes you nervous, there are other ways to evaluate a person's fit without the formality of a psychological test. San Francisco State University's management professor John Sullivan suggests that CIOs give candidates a sheet of paper with a list of 100 cultural variables or conditions such as fast-paced, collaborative, independent and competitive, and ask them to pick the top five conditions under which they work best and to rate them in order of importance. This type of quiz tells you essentially the same information as the Predictive Index tool, but it is less formal and intimidating. —M.L.

views. He says the PI gives him the confidence to know when the right person is under his nose and which applicants not to bring in. (For another way to assess fit, see "Determining Fit Through Specific Questions," this page.)

RECRUIT THE ATTITUDE ALL-STARS

If you want the Tom Brady of IT management working for you, then you and your best players have to court him. This practice is called relationship recruiting.

Mandalay Resort's Austin hired a director she knew from a consulting company she had worked with while at Harrah's Entertainment and who continued to do work for her once she joined Mandalay. When Austin had an opening for a director, she contacted this person to tell him about the job. Because she had previously worked with him, she knew he had the right attitude for the job. He was an application architecture and development whiz; he had the desire and ability to teach others; he empathized with business users; and he was

committed to learning and leading change.

When she learned this person was interested, Austin approached the principal of the consultancy and told him. Austin wound up with a top-notch director and hired a known quantity. And she maintained her relationship with this company because she conducted herself in a forthright manner. "By pre-identifying potential employees over a period of time, you don't make hiring errors," agrees Sullivan.

In addition, relationship recruiting can help CIOs get around the problems associated with being unable to get objective references. When Gevity HR's Zimmerman is looking to hire, say, an Oracle database administrator or a business analyst, and a candidate's résumé indicates he has worked in Oracle shops, he and his staff will call the executives they know at Oracle as part of the reference-checking process to see if their contacts know the candidate. Zimmerman says that leveraging his contacts in the IT industry is a dependable way to get "good back-door information." (For more information, see "Mastering the Art of Relationship Recruiting" at www.cio.com/printlinks.)

WINNING THE GAME

Hiring is one of the most important aspects of a CIO's job. The value a CIO and IT bring to a company's bottom line is directly related to the quality of the individuals supporting the CIO and their chemistry. Taking the time to recruit the right people with the right skills and attitudes will vastly improve your hiring odds. Says Hofmann, "We're all going to be working together, so it's important that we have a very synergistic team." **CIO**

Share your tips for hiring the right people with Senior Writer Meridith Levinson at mlevinson@cio.com.

Learn More About Interview Techniques

One way to find the right people is to ask riddles and logic puzzles that will demonstrate an appetite for solving difficult problems. Author John Kador shares some samples (with answers) in "Close Encounters with the Brain-teaser Job Interview," which originally ran on our sister site, www.darwinmag.com. Find the link at www.cio.com/printlinks.

cio.com

**INFORMATION
LIFECYCLE
MANAGEMENT IS:**

a strategy that uses people, processes and technology to store and tap critical business data throughout its lifespan of value.

IN THIS EDITION:

See how companies are turning their new regulatory challenges into business opportunities by leveraging the benefits of Information Lifecycle Management.

Information Lifecycle Management: The Smart Way to Save Money

CERTAINLY, SMART COMPANIES recognize that information is the linchpin of their success. In most organizations, corporate information is their most valuable asset, the key ingredient with which innovative new business models are built.

"The ability to use and leverage information as a company to drive additional business is critical," says Mark Lewis, chief technology officer at EMC in Hopkinton, Mass. "For many companies, smart use of information has truly become a differentiator, particularly as technology provides companywide access."

But if innovative information management is the ultimate goal, then the immovable object squarely in its path

is the reality of today's lean IT budgets. Technology is the vital framework on which companies rely to help business information flow freely, but many worthy efforts have been hamstrung by the flat or declining budgets of the past several years.

Yet limited resources are no excuse for limited action, says Chuck Hollis, vice president of platforms marketing at EMC. "More and more companies are realizing that information is money, and they have to do a better job of managing their money," he says. "But all this is happening as IT budgets are flat and labor costs are growing."

Spurred by boardroom-level concerns about the escalating costs of

OPERATIONAL
EFFICIENCY

"Our business was able to cut support staffing by 30 percent, yet increase its throughput by 20 percent. [ILM] had a significant bottom line impact and a net delta of somewhere around 10 percent in our profitability, directly attributable to this planned technology."

—Bob Terdeman,
Rogers Medical
Intelligence

technology, IT executives have embarked on a constant search to make their infrastructure as streamlined and cost-efficient as possible.

Many have already implemented measures that address cost-cutting on a piecemeal basis—server consolidation or outsourcing, for example—but also need a method of reducing infrastructure and information management costs enterprise-wide. One intriguing answer: Information Lifecycle Management (ILM), which offers an opportunity to streamline infrastructure costs across the board by tying the business value of information to the cost of managing it.

"If you think of information bits as assets, Information Lifecycle Management is the alignment between the value of information and how much a company is spending to make it available to people," says Hollis.

Information Lifecycle Management can help streamline operational costs. New York's Rogers Medical Intelligence Solutions has recognized significant cost savings through Information Lifecycle Management, according to Robert Terdeman, the company's vice president and chief information architect. "One of the key results is that our business was able to cut support staffing by 30 percent yet increase its throughput by 20 percent," says Terdeman. "It had a significant bottom line impact and a net delta of somewhere around 10 percent in our profitability, directly attributable to this planned technology."

**TECHNOLOGY OPERATIONAL
EFFICIENCY: BUSINESS DRIVERS**

Much has changed over the past several years for companies that rely on online information for strategic value. Consider:

Budget Constraints. While CIO magazine's latest quarterly Tech Poll forecasts a modest increase in IT budgets for 2004, caution is still the watchword. Nearly one-third of survey respondents say that ongoing financial constraints affect IT spending, while nearly 60 percent say that spending

**OPERATIONAL EFFICIENCY:
BUSINESS DRIVERS**

- Budget Constraints
- Explosive Information Growth
- Manual Processes
- Fragmented Management Strategies
- Regulatory Compliance Issues

on computer hardware will remain flat or decrease.

Explosive Information Growth. Companies are squirreling away unprecedented quantities of data in many forms—the structured information that lies in databases as well as the unstructured, file-based information that lies in Word and Excel documents across a network.

"Information is growing at a ridiculous rate," says Steve Kenniston, a technology analyst at Enterprise Storage Group, a research company based in Milford, Mass. "Where there used to be one storage administrator for one terabyte of data, now they need one administrator to manage six terabytes, and soon it'll be one for every 14 terabytes. For that to happen, companies need to make information management more efficient."

Manual Processes. "Categorizing, moving and disposition of data is still a very manual process at most companies," says Hollis. "Tools are few and fragmented, and a far cry from the automated determination of policy." Worse, manual information management consumes staff time—and as Hollis points out, "Labor is the most expensive component of IT today."

Fragmented Management Strategies. Gaining a bird's-eye view of all that information is no small task. Without a comprehensive strategy, it's difficult for companies to manage the data that's spread across an entire enterprise.

Regulatory Compliance Issues. New regulations and corporate governance mandates for the storage and management of information mean that companies must

be able to retrieve data quickly and on demand. Faced with the difficult and time-consuming task of accessing data that may well be spread across a variety of sources—or that may have been deleted—it's small wonder that companies can be frightened into taking a "save it all" approach.

These issues are prompting CIOs to recognize that the real opportunity to drive big costs out of IT is to look across the entire lifecycle of the information and the infrastructures that support it. In short, Information Lifecycle Management.

As detailed in earlier parts of this series, Information Lifecycle Management is not a product but rather a method of harnessing informational chaos. "[It] is a strategy, and one that encompasses people, processes and technology," says Kenniston. Done right, ILM is proactive and dynamic, and

INFORMATION LIFECYCLE MANAGEMENT ENABLES OPERATIONAL EFFICIENCY

- **Improve Classification**
- **Leverage Existing Assets**
- **Enable Policy Automation**
- **Tier Storage**
- **Decrease Compliance Costs**
- **Stretch IT Resources**

helps companies plan IT growth to meet their anticipated business needs. "[Information Lifecycle Management] is the ability to provide companies with access to information—the right information—and the most up-to-date and logical version across the enterprise," says Tanuja Randery, vice president for global strategic initiatives at EMC. "If companies want to access and use information to their business advantage, ILM enables this by providing a unified approach to viewing and access while ensuring that the cost and performance of the infrastructure is optimized."

LINKING INFORMATION LIFECYCLE MANAGEMENT AND OPERATIONAL EFFICIENCY

Implementing Information Lifecycle Management can help companies manage information both more wisely and less expensively. By building an information management strategy based on this discipline, companies can build cost savings into their infrastructure in a holistic fashion. Information Lifecycle Management Helps:

- **Improve Classification.** Many companies don't even know what they have for equipment. Information Lifecycle Management, which starts with a thorough inventory of physical and informational assets, ensures that companies know exactly what they have, which helps them make better-informed spending decisions. By conducting a data classification and prioritization study, companies can ensure that data is placed on the level of storage most appropriate to its business value. Many times, that means calling in outside experts. "Information Lifecycle Management consultants are part of the storage companies' bench teams," says Pete Gerr, an analyst at Enterprise Storage Group. "They have the services and tools that will help an organization classify and value their data, taking a step toward having a fully realized strategy."
- **Leverage Existing Assets.** Once companies know exactly what's there, they can better prioritize information assets in accordance with information management policies. "If you know up front what you have and how much data is being created, you'll do better capacity planning," says Kenniston.
- **Enable Policy Automation.** The ability to simplify and automate technical infrastructure through Information Lifecycle Management means that companies can lower business costs and hire fewer people. "You get efficiencies by automating the things that people have to do today," Hollis explains. By creating and then automating policies

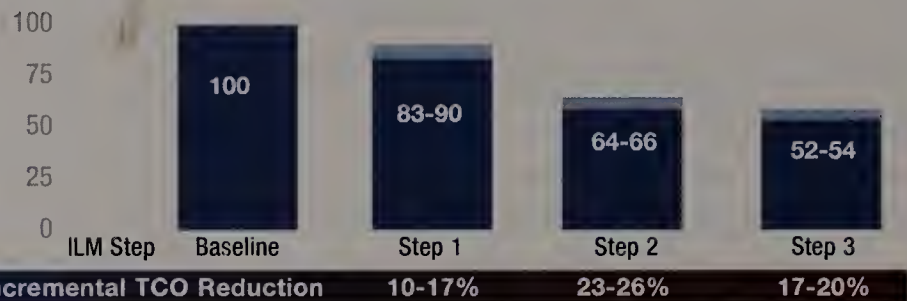
"Information is growing at a ridiculous rate. Where there used to be one storage administrator for one terabyte of data, now they need one administrator to manage six terabytes, and soon it'll be one for every 14 terabytes. For that to happen, companies need to make information management more efficient."

—Steve Kenniston,
Enterprise
Storage Group

OPERATIONAL
EFFICIENCY

IMPACT OF ILM AND TCO SAVINGS ACROSS STAGES

Three-Year TCO Estimate for Typical Large Enterprise* (Indexed to 100)

Drivers of Reduction
with step implementation

*Enterprise has 750 TB of baseline total storage; TCO calculation includes business costs (i.e., data loss, compliance, downtime, and data search time)

- Networked storage
- Storage automation
- Storage consolidation
- Application-specific service level alignment (based on business policies)
- Improved continuity and compliance
- Automated management and control
- Service levels aligned across enterprise data

SOURCE: EMC

to drive information management, companies can streamline operations and cut costs. "The principal savings is around the dynamic movement of data," says EMC's Lewis. "The value of data changes over time, and ILM helps flexibly move data to the appropriate level of storage as its business value changes."

- **Tier Storage.** Classifying data enables IS executives to create tiered storage that matches the business value of the data with the corresponding price/performance layer of storage. For example, mission-critical applications might reside on high-performance disks, while important but less critical data land on less costly ATA disks. "Having high-end, mid-tier and archive storage makes a lot of sense financially and from a recoverability standpoint," says Kenniston. "By migrating the lower class of information to a second tier of storage, companies save money but also keep it available and protect it more easily." As the range of options in tiered storage increases, so do the effective business continuity options for the corporate world.
- **Decrease Compliance Costs.** Information Lifecycle Management handles data according to its business value at a very granular level, so CIOs know what data should be kept and what can be deleted,

thus saving money. It also makes compliance much simpler, so companies are less likely to incur compliance-related expenses such as legal fees or staffing costs.

- **Stretch IT Resources.** Automating information management in accordance with data policies means that CIOs will be able to redeploy existing staffers to other projects, making their resources go further for the same money. "If companies can automate the process and take the human aspect out of it, it saves them money," says Kenniston. "Once CIOs are convinced that storage can be automatically moved to the right asset when they want to move it, automation is the next step."

In an era of increasing concern over the cost of technology, CIOs see the wisdom of embracing budget reduction strategies that add value as well as cut costs. One important step is to implement a strategy that works across the entire company to manage information holistically.

"By implementing Information Lifecycle Management, we believe that CIOs can expect to see a net of up to 50 percent actual cost savings in overall storage costs," says EMC's Lewis. Companies can make sure that they drive all possible extra costs out of managing and storing information—and at the same time, truly give business leaders what they need to thrive.

"If you recognize that information is a core company asset similar to physical plant and human resources, then you really understand the value of an integrated storage solution," says Terdeman. "Because what you're really storing are critical company assets in a managed and efficient way."

NEXT: In the next part of this series, we'll look at Information Lifecycle Management for small to medium-sized enterprises (SMEs).

QUESTIONS ABOUT
INFORMATION
LIFECYCLE
MANAGEMENT?

If you've got any burning questions about Information Lifecycle Management—and how you can begin implementing such a strategy—send them to ilm_questions@emc.com. We'll answer the most frequently asked questions later in this series.

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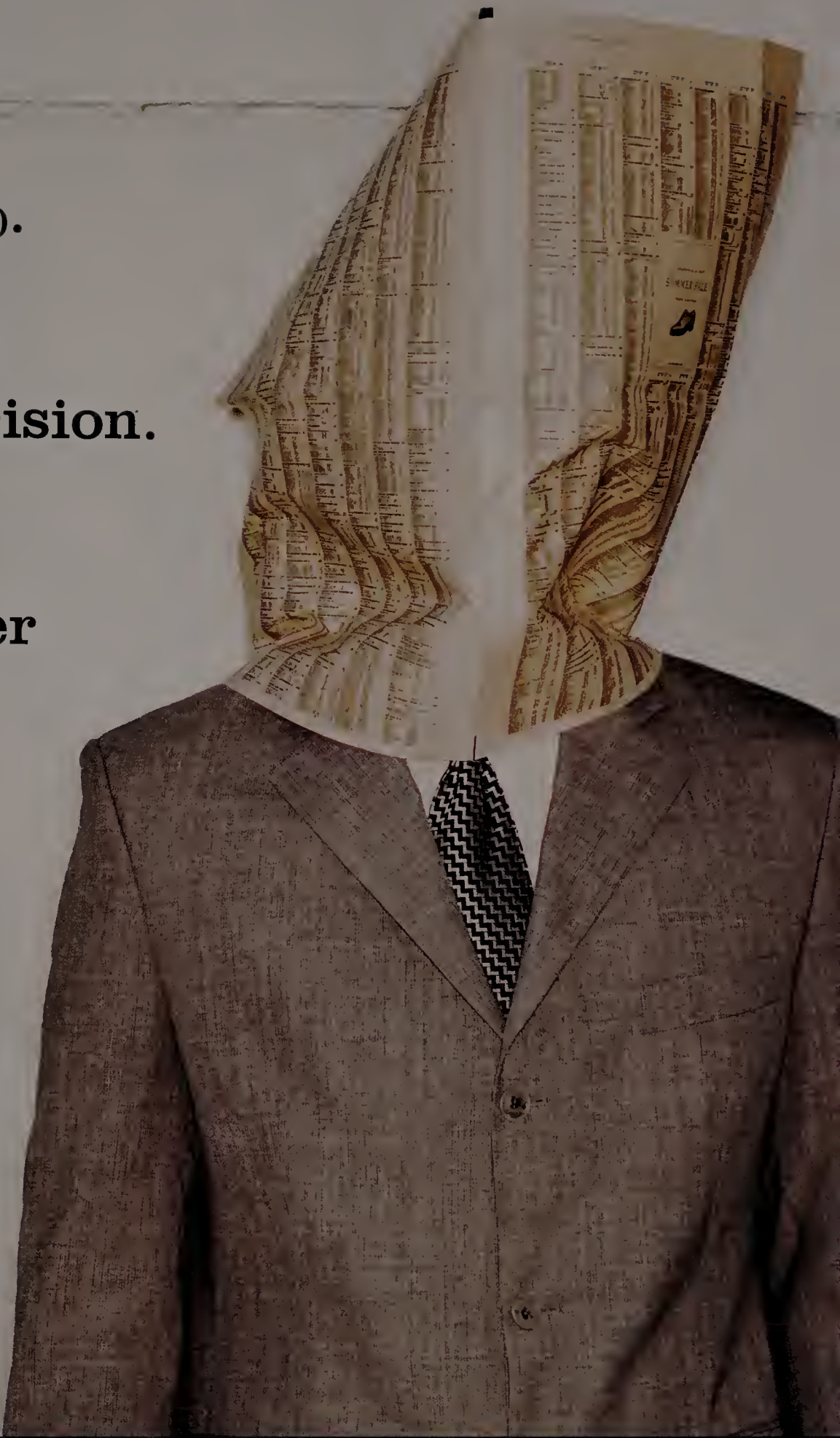
for an in-depth look at Information Lifecycle Management products, services and strategies.

Meet Joe (not his real name).

**Joe forgot how much
was riding on his decision.**

**He forgot about the
CIO Evaluation Center**

**Don't make Joe's
mistake...**



The Resource for
Information Executives

Announcing the CIO Evaluation Center. CIO Magazine and Technology Evaluation Centers Inc. have joined forces to make available to CIO Magazine readers, a cutting edge online tool that impartially compares enterprise software products, side-by-side and interactively.

It could have shown Joe which product best matched his needs.

Joe was last seen scrutinizing the CIO Evaluation Center at: <http://www.theciostore.com>



chang

THE MYTHS OF OPEN SOURCE

It isn't all about cheap: Companies keep finding good reasons to take advantage of open-source software BY MALCOLM WHEATLEY

AT FIRST GLANCE, THE COMPANY EMPLOYEASE SEEMS UNREMARKABLE. BUT LOOK A LITTLE CLOSER.

Employeease, which provides employee benefits administration services to more than 1,000 organizations across America, has an IT architecture chiefly built around open-source software, which makes it a rare bird—not that it was planned that way when the company was founded in 1996.

"It's been quite a surprise to me. The open-source model just seems intuitively wrong," says John Alberg, the company's cofounder, CIO, CTO and vice president of engineering. But the facts speak for themselves.

The company's 25 production application servers run on Red Hat Linux, having been switched from Windows NT in July 2000. Webpages once delivered by Netscape are now served by Apache, supplemented by Tomcat, an open-source Java servlet engine. Send an e-mail to Employeease and it's processed by Sendmail, an open-source mail server, while the company's software developers use XEmacs, an open-source development tool.

But that's not all. Although the company's main applications use Informix for database management, Alberg happily confesses that he can see a time when the proprietary software will be displaced by MySQL, an open-source relational database system already used by the company for less critical applications. Snort, an open-source intrusion detection tool, is also under active consideration, says Alberg.

Companies such as Employeease herald a sea change in corporate attitudes toward open-source software. Once seen as flaky, cheap and the work of amateur

Reader ROI

- Why open source isn't all about the price
- What companies are using open source for mission-critical applications
- What questions exist surrounding the legality of using open source

developers, open source has emerged blinking into the daylight. With unrestricted access to the source code to run or modify at will, and support coming from an ad hoc collection of software developers and fellow users, the open-source model is very different from proprietary software. But it is nevertheless proving attrac-

buying behavior of a zealot. He wouldn't, for example, go open source if it were more expensive than proprietary code. "Solaris is a strong commercial operating system. We'd choose it over open source if we found it to be less expensive," he says. "[While] cost is a huge driver for our decision-making process,

Where reliability is paramount, Sabre Holdings uses pricing—or "data of record"—applications, which run on high-spec, fault-tolerant Hewlett-Packard NonStop systems. But shopping applications—where customers and travel agents hunt for the best deals—run on a server farm of lower-cost

Once seen as flaky, cheap and the work of amateur developers, open source has emerged blinking into the daylight.

tive enough for a host of CIOs to make the switch. So who's using open source? Why are they using it? And are the benefits worth the risks? The answers are surprising—and dispel some of the myths surrounding open source.

THE ATTRACTION IS THE PRICE TAG



One of open source's most touted benefits is its price. Download the software, install it—and don't pay a penny. That's the theory. But to a surprising number of open-source user companies, the price tag—or lack of one—is irrelevant. "It's not about being cheap," insists Employee's Alberg. "It's about doing our jobs effectively—and we're willing to pay quite a bit for that. We want stable software that does what it says it will do."

What Alberg finds fascinating about moving to open source is the performance improvement that resulted. The move to Linux, for example, dramatically cut the rate of server failure experienced by the company. Typically, under NT, one of the company's servers would fail each working day. Now, he says, "we get at most two failures a month—and often don't get any in a month."

Linux also runs Alberg's applications faster than NT, a fact that has meant that despite more than doubling its business since 2000, the company hasn't needed to buy more servers. "Linux increased our capacity by between 50 percent and 75 percent," says Alberg.

Even so, Alberg is careful to make clear that his commitment to open source isn't the blind

we cannot risk choosing an inferior solution to save money. We couldn't even consider open source if it weren't at par with—or in some cases better than—commercial alternatives."

Ask many users of open source and a similar story emerges. "Cost savings weren't really a factor in our decision to go open source," says John Novak, CIO of 330-plus hotel chain La Quinta, which is moving its online booking system—previously on BEA's WebLogic—to a combination of Apache, JBoss and Tomcat. "What got us into it was that it was simply the best technology open to us."

THE SAVINGS AREN'T REAL



Open-source software has been described as "free, as in a free puppy." And yes, the absence of software licensing fees needs to be offset along with the costs of training, support and maintenance. On the other hand, proponents of open source also cite reduced costs of "vendor churn," where vendors require users to migrate to a new version or pay for extra support. Most users we spoke to for this story reported a net savings with open source—often a substantial one.

At Sabre Holdings—the company behind Travelocity, the Sabre Travel Network and the Sabre travel reservation system—a major migration to open source is under way, prompted by Sabre's prediction that the move will yield savings of tens of millions of dollars during the next five years.

The company runs two distinct groups of computers, explains CTO Craig Murphy.

Each shopping computer has its own open-source MySQL database, explains Murphy, synchronized by an application from GoldenGate with the rules, fares and availability information held on the fault-tolerant "data of record" system. The shopping systems were on HP-UX, but by the beginning of this month, all of those servers will have switched over to an open-source operating system—Red Hat Enterprise Linux AS.

The big attraction of open source is that there's a zero marginal cost of scale because open source doesn't require additional licenses as an installation grows, he says. As a result, the cost per transaction plummets as you add more systems. Exact comparisons are tricky, says Murphy, "but where we can make like-for-like comparisons, we're expecting at least an 80 percent reduction in running cost."

THERE'S NO SUPPORT

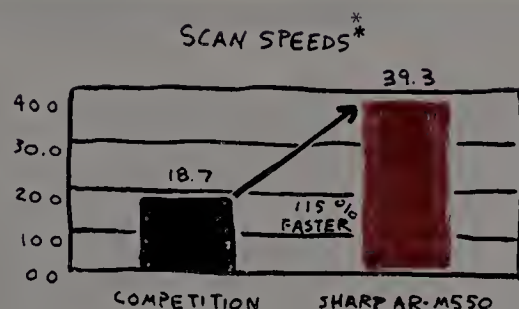


According to Gary Hein, an analyst with technology consultancy Burton Group, technical support is a potential open-source user's primary concern. "Who do you call when things go wrong? You can't wring a vendor's neck when there's no vendor," he says.

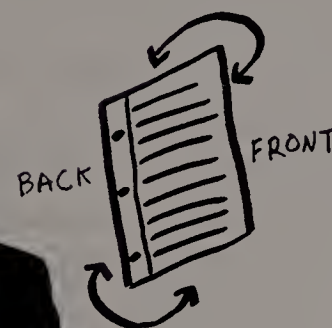
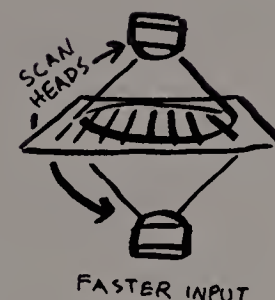
In practice, the situation is complex. As Hein points out, most open-source projects have a large corps of developers, Internet mailing lists, archives and support databases—all available at no cost. That's the good news. The not-so-good news is that there's no single source of information. "A simple question may result in multiple, conflicting answers

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Open Source

with no authoritative source," he says.

Even so, says Klaus Weidner, a senior consultant with technology consultancy Atsec, multiple sources of support can be better than being tied to one vendor—especially when that vendor provides bad support or refuses to continue supporting software of a certain vintage.

In practice, existing users of open-source software appear perfectly happy with open-source support arrangements. "The breadth of resources available for open-source applications is so great worldwide that we can get support, communicate with a developer or download a patch no matter the time of day," says Thomas Jinneman, IT director of Right-Now Technologies, an ASP that hosts customer service products for more than 1,000 companies worldwide, including British Airways, Cisco Systems and Nikon.

The company's hosting environment runs on Linux, Apache and Tomcat, and 97 percent of its customers use MySQL, says Jinneman. Indeed, he adds, "we've had more trouble getting support for some of our purchased commercial applications than we've had with open-source applications."

Some open-source applications also have support offered by the original developers. JBoss, for example, is backed by JBoss Group, which includes the 10 core developers who wrote the application. Depending on the contract, explains JBoss Group President Marc Fleury, users can obtain 24/7 professional support with as little as a two-hour response time. The group also offers training.

A similar model also underpins Sourcefire, whose founders created Snort, the popular open-source intrusion detection tool. Downloaded off the Internet, Snort is command-line-driven, explains Sourcefire CTO Martin Roesch. Enterprise users can set it up themselves—but more and more are contracting Sourcefire to do it instead so that the company can handle security management details.

"What I like is that you get all the advantages of open source in terms of people working on it, as well as the advantages of a commercial enterprise behind it in terms of longevity and liability," says Kirk Drake, vice



SCO GROUP'S MAY 2003 LETTER to 1,500 large-company Linux users grabbed headlines. The letter warned the users that SCO might seek legal action against them as part of its ongoing fight with IBM over allegedly stolen Unix code that may or may not be in Linux. And SCO's more recent assertion that the General Public License (GPL), under which much open source is published, may violate the U.S. Constitution has caused a few eyeballs to roll and roiled some tempers. But beyond that, the brouhaha's impact may be limited. A number of open-source vendors have already moved to indemnify customers.

Lawyers, too, seem unconcerned about the risks that the SCO assaults pose to the typical CIO—especially since IBM, a major open-source vendor, has signaled its intention to rebut the charge vigorously. "If IBM's involved, we've got some assurance that these issues are going to get resolved," says Karen Copenhaver, a partner in the patent and intellectual property practice of law firm Testa, Hurwitz & Thibault.

Others are also skeptical. "It's essentially a dispute between IBM and SCO, and it won't affect the majority of Linux users," says Jeff Norman, a partner in the intellectual property practice of law firm Kirkland & Ellis. "Even if SCO wins, I find it highly unlikely that SCO has a claim on Linux users."

As for the Constitutional claim? "[SCO CEO Darl McBride's] argument that the GPL violates the U.S. Constitution is just plain silly and has generally been dismissed as such," says Copenhaver. "It is certainly one of the more bizarre allegations that he has made."

—M.W.

president of technology for the National Institutes of Health Federal Credit Union.

IT'S A LEGAL MINEFIELD



A variety of open-source licenses exist, and helping CIOs understand their implications is good business for lawyers—very good business. "[CIOs'] concerns chiefly revolve around the implications of using code to which they can't verify their right to use," says Jeff Norman, a partner in the intellectual property practice of law firm Kirkland & Ellis. "Just because you've got a piece of paper saying that you own the Brooklyn Bridge, it doesn't mean that you actually own it."

For some users, third-party indemnification is an option. On Nov. 17, 2003, for example, JBoss Group announced it will indemnify and defend JBoss customers from legal action alleging JBoss copyright or patent infringement. Other vendors of open-source software—including HP, Red Hat and Novell—also offer

indemnifications of varying types.

And while conceding that the situation isn't perfect, Sabre's Murphy says that he's heard all the legal arguments he needs. "It's a concern, sure, but we've basically got to do this. There may be friction and challenges—but I don't see any showstoppers." (See "Open Source Under Attack," this page.)

OPEN SOURCE ISN'T FOR MISSION-CRITICAL APPLICATIONS



Mission-critical apps don't come any more crucial than those in banking, where transaction systems simply have to work, period.

Experimenting with open source, with its attendant risks in terms of potential infringement, security and maintenance, might be regarded as anathema. "Banks tend to be conservative institutions—first followers, if you like, rather than leaders," says Clive Whincup, CIO of Italian bank Banca Popolare di Milano, who freely



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Open Source

admits that the bank's venture into open source was the result of "some fairly lateral thinking."

But walk into Banca Popolare's smart new branch on the Via Savona in Milan's Zona Solari district, and the service these days is much faster than customers have previously experienced. The reason? Unwilling to throw out the bank's legacy banking applications, totaling some 90 million lines of Cobol, but unable to keep them running under IBM's vintage OS/2 Presentation Manager operating system, Whincup has used a proprietary legacy integration tool from Jacada to con-

propriety logistics management system, Chess Logistics, brought out a new version that ran on Linux—a version that promised to improve performance by a factor of between 10 and 15 times. Helps happily signed up, and he hasn't regretted the decision.

But his experience of running Red Hat Linux in a true production environment, with users logging on to the main Linux server from what he describes as "thin clients with a cut down Linux operating system," prompted him to reevaluate the company's desktop policy. In the end, the company opted to replace

employee organization that serves more than 40 countries.

THE BOTTOM LINE

Is open source right for every organization? In the end, argues Andy Mulholland, chief technology officer for Cap Gemini Ernst & Young, it's a question of attitude. "The arguments for and against open-source software often get very trivialized," he says. "It's not a technology issue; it's a business issue to do with externalization."

Companies with an external focus, he says,

"The arguments for and against open-source software get trivialized. It's not a technology issue; it's a business issue." —CTO Andy Mulholland, Cap Gemini Ernst & Young

nect the Cobol to IBM's WebSphere—running in a Linux partition on the bank's mainframe.

The result: Formerly disjointed applications now run slickly in a Web browser, yielding faster transaction times, less time spent training tellers—and many more opportunities for cross-selling the bank's services.

Billed by insiders as one of Europe's largest Linux projects, the Zona Solari branch is piloting the new system, says Whincup. Once testing is complete, full rollout will begin in May. One decision to be made before then: whether to leave the branch desktops running Windows XP, as in the Zona Solari pilot, or move them to Linux as well. "Both of the next two branches to pilot the system will be using Linux [on the desktop]," Whincup says.

OPEN SOURCE ISN'T READY FOR THE DESKTOP



At Baylis Distribution, a transport and distribution company, IT Director Chris Helps came across the MySQL database four years ago when the company was looking to create a data warehouse. Around the same time, the company began experimenting with Linux, he says, for small-scale, noncritical applications. The move to mission criticality came last year after the vendor of the company's

Microsoft on desktops with Linux and open-source personal productivity tools for activities such as word-processing and spreadsheets.

"We've not done a formal evaluation of the savings, but a broad-brush calculation is that it costs \$1,820 per seat to install a PC with all the Microsoft tools a user needs. With Linux, and open-source tools, it's only around half that," Helps says. What's more, usability improved. "People can log in from any PC in the group and have all the same services and facilities available to them as if they were sitting at their own desks." Better still, IT support is simplified. "We haven't got the complications of users establishing a unique personalized environment on their desktops: We've got better control, better upgradability and better traceability."

Nor is Helps alone. Other IT shops—as big and diverse as Siemens Business Services and the Chinese government—are also convinced that Linux is ready for the desktop. Siemens, for example, says it has performed extensive testing with "real-world, nontechnical workers," finally declaring that Linux has now matured as a desktop system. The tests confounded the company's expectations. "We [at first] didn't see Linux on the desktop as a major market, but we were wrong," says a spokesman for the 35,000-

which are used to working collaboratively with other organizations, and perhaps are already using collaborative technologies, stand to gain much more from open source than companies with an internal focus, which see the technology in terms of cost savings.

"The lesson of the Web is that standardization is better than differentiation," Mulholland claims. "Is there a virtue in doing things differently? Is there a virtue in doing things the same way as everybody else?" As the past decade has shown, standardization with a proprietary flavor—think Microsoft—has its drawbacks: bloatware, security loopholes, eye-popping license fees and an unsettling reliance upon a single vendor. In offices around the globe, an era of open-source standardization, determined to condemn such drawbacks to history, may be dawning. **CIO**

Malcolm Wheatley is a U.K.-based freelance writer. E-mail feedback to letters@cio.com.

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The right way to deploy an Office of the CIO structure

Reader Q&A

How comfortable do you find the hot seat? E-mail Leadership and Management Editor Edward Prewitt at hotseat@cio.com.

Chief Beggar, Fortune-Teller and Juggler

How to balance all your roles without dropping the ball

BY MICHAEL FITZGERALD

Wanted: CIO. Must be a strategist, technologist, operations expert, supply chain manager and department chief.

Does this sound like an imprecise, all-encompassing job description? In fact, it reflects what many IT leaders are finding about their jobs: It's hard to put them in a box.

That's as opposed to the classic, Gartner-approved definition of what a CIO does: Lead supply and demand for the IT function. "The CIO maps to strategy, anticipates requirements and needs in terms of technology, and then needs to be able to supply it," says Ellen Kitzi, group vice president for the Americas division of Gartner Executive Programs.

Well, maybe that was true for your father's CIO, but it isn't anymore. Indeed, one can almost hear Kitzi smile as she recounts the job description; she knows that today's IT executives face many more tasks in organizations, as companies become more information-centric.

Catherine Brune, senior vice president and CTO at Allstate Insurance, says her list of jobs includes the expected range—project manager, business funder, vendor manager and security specialist—and some extraordinary things as well, such as innovation incubator, referee, psychologist and fortune-teller. "And when my crystal ball isn't as good as it needs to be, I need to be a good Houdini," she jokes.

Kitzi says that "in many ways, CIOs today are being asked to wear many CXO types of hats." Because IT crosses most, if not all, levels of the corporation, CIOs "can be the glue or the enabler that brings the whole organization together,"

she says. It's difficult to be everything to everyone, but that's the reality of the current CIO job. Here's how to make all the hats fit.

The All-in-One Executive

At the highest level, CIOs must have the vision thing down; they need to be able to see where technology is going and



Allstate Insurance CTO Catherine Brune blocks out time almost every day for the conversations with other executives that are necessary to managing all her roles.

what will matter to their companies, and then have an ability to lead the organization in that direction. That kind of leadership skill resembles what a CEO does for the overall company. CIOs must also manage costs and deliver returns on investments like a CFO, particularly in today's cost-conscious, results-oriented business environment. There is increas-

Hot Seat

ing and steady pressure on CIOs to optimize performance and manage operations internally, much as a COO does for a company as a whole. Finally, CIOs also have to serve a variety of other business units, which Kitzis says makes their job more complex than just running a department.

Indeed, CIOs have so many duties and get involved in so many facets of corporate life that it's easy to argue they wear more hats than anyone else.

That's a classic setup for having responsibility but no authority. For instance, security and privacy issues, as well as disaster recovery, require a companywide effort. To guide security efforts, Brune in effect becomes first a consultant for the rest of Allstate, recommending business practices and policies to ensure that all information remains secure and private, and then a negotiator, wrangling with business unit heads on how they should implement such policies.

She also finds herself working on tasks that are more directly related to other departments than IT, such as making sure that Allstate information is tracked in a way that shields the company from legal liability. That task may sound like it belongs in the legal department, but Brune is responsible for the technology that makes it work. That's one reason why the company's chief privacy officer reports within her organization, though technology isn't a major component of that person's job.

Brune's negotiation skills come in handy, she says, when she wants to see something implemented but doesn't quite have the budget for it. If she can build an effective case for how a technology will help a business unit, the unit head might kick in money from his budget to make the project happen.

"Begging is the best skill you can have," she says. She also thinks that both

her 28-year career at Allstate and her operational experience outside of IT (in sales and marketing) help her understand the needs of the business units, which limits the potential tensions of a cross-enterprise role like hers. Not only that, but she also manages her own P&L group, Allstate's printing unit.

Brune has been in her role as CTO for just over a year. She has spent much of that time thinking about how IT should function at Allstate, which is rethinking its entire organizational structure. Most of the company's units have remained standalone, but IT and

The Washington Post Co. In addition to his responsibilities as operations manager, administrator, strategist, gatekeeper and coach, he serves as corporate explorer and investor. In the explorer role, Terkowitz sits on the board of TRUSTe so that the Post can stay on the cutting edge of online privacy issues. Terkowitz vets the Post's venture capital investments, such as the stake it took in Tribe.net, a promising social networking startup.

He also wears a CEO's hat, having been the CEO of Digital Ink, a Post Co. subsidiary in online publishing, and the

MANAGEMENT ESSENTIALS

Trust Is the Best Motivator

Some important things never make it into job descriptions. Trust, for instance. Both Allstate Insurance Senior Vice President and CTO Catherine Brune and Washington Post Co. CTO Ralph Terkowitz say that when working with good staffers, trusting them to get their jobs done makes them far more able to handle the number of different hats each has to wear.

Another important form of trust: Trust your CIO peers. Brune joined IT executive groups both in and out of the insurance industry when she became Allstate's CTO. She signed up to hear about what CIOs in other industries are experiencing. She says that having to present in front of the industry groups has helped her do her job better at Allstate.

—M.F.

marketing were established as enterprise-wide organizations, with the belief that that will help the company's long-term growth.

Even so, Brune places relationship-building above organizational structure. She blocks out time on her calendar almost every day for the conversations necessary for getting the IT exec job done. She gets in at 7 most mornings to make sure she has time for talking to people.

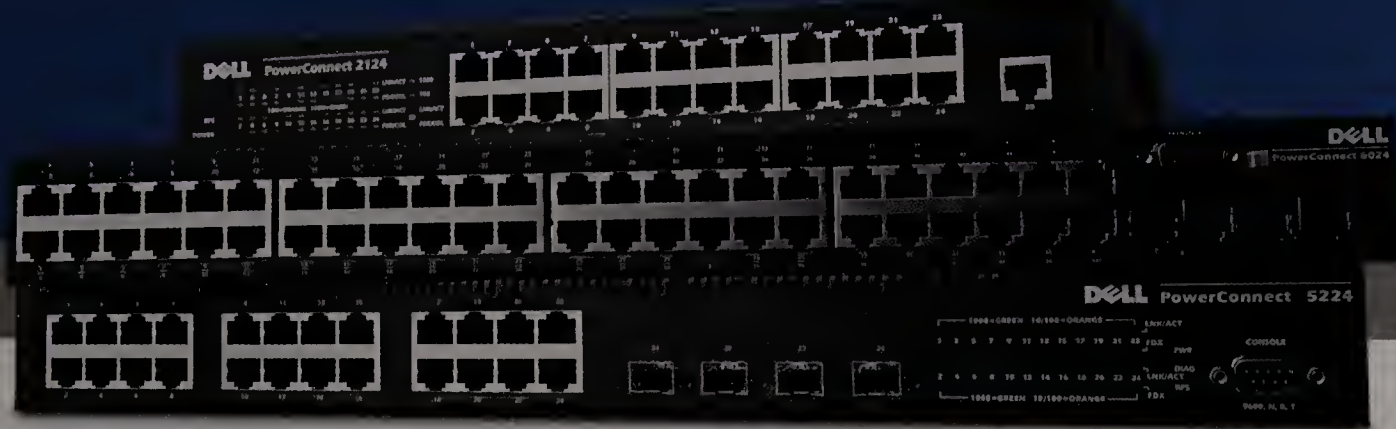
The VC Inside

On top of their corporate roles, many CIOs now are expected to behave in almost entrepreneurial fashion. That's the case for Ralph Terkowitz, CTO at

co-CEO of another subsidiary, BrassRing, a recruitment software and services company. All the while, he performed the role of corporate CIO for the Post Co.

Terkowitz has been able to do all this because as CIO for The Washington Post Co., he has a corporate job that is different from serving as CIO of *The Washington Post* newspaper. Washington Post Co. also publishes *Newsweek* and owns several dozen smaller newspapers, six TV stations and a regional cable system. It also owns Kaplan, the learning and test preparation company. So Terkowitz has to plot a path for all of these units but does not have to run any of them day-to-day. Like all the company's divisions,

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Hot Seat

The Post newspaper has its own IT staff and CIO, who reports to the president of the newspaper, with a dotted line to Terkowitz.

"Not having that large day-to-day responsibility gives me the opportunity to touch all our businesses and related business, to look at the impact of technology and bring it back inside," he says. In fact, his role often centers on determining best practices and collaborating across business units on technology choices.

Terkowitz retains responsibility for certain areas of technology across the company's operating units. He is responsible for relationships with auditors and for making sure that the IT departments are in compliance with regulations, like Sarbanes-Oxley. He also runs the company's shared services, such as its single-sign-on security initiative and human resources IS.

"We looked at what mattered to individual units and what was a necessary evil. The necessary evil is all shifting to me," he quips. In large part, that's being done to save the company money—it gets better volume pricing when all its units are considered for something like e-mail.

Still, it might sound like Terkowitz has to spend so much time switching hats that he probably wishes he were a hydra. Not so, he says. He has found that he doesn't have to wear all, or even most, of his hats every day. "The various hats either shrink or swell depending on the year," he says.

As with many CIOs, his role adapts to the economy. In 1999 and 2000, the bulk of his time was spent on innovating, particularly within the newly developing dot-com businesses at the Washington Post Co. The following years, 2001 and 2002, saw a great deal of focus on best practices, cost-cutting and controls, and improving IT's alignment with the business. Now his

MANAGEMENT REPORTS

Corporate Culture Carries On

Why organizations resist change

The notion of corporate culture has become so widely accepted over the past two decades that it's hard to remember how innovative the concept seemed when introduced to the popular business press by the 1982 book *In Search of Excellence*. It's a rare company since then that hasn't been subjected to multiple efforts to change its culture.

If corporate culture were easily modified, then management consultants and authors would be in much less demand, notes John Weeks, an assistant professor at the Insead business school campus in France. In a recently published book, *Unpopular Culture* (University of Chicago Press, 2004), Weeks applies his background in organizational behavior to a study of culture at a large British bank, National Westminster. He concludes that corporate culture is more complex than has been previously understood because it descends from the broader social culture.

The book's title refers to the culture of complaint that exists at NatWest, where no one—from the CEO down to the most junior clerks—has anything nice to say about his employer. This good-natured carping is entirely representative of British culture, observes Weeks. Changing this feature of NatWest's organizational culture, or most anything else significant about the way NatWest employees work, is therefore not easily done. It means taking on deeply ingrained values, customs and preferences.

But the incessant complaining is more than a byproduct; it's a mecha-

nism by which NatWest employees both cope with and resist change. Through such seemingly insignificant acts as joking about "not another change program," employees at all levels soften the blow of organizational change and even arrive at an unspoken agreement about their willingness to accommodate change.

It may come as little surprise to CIOs that IT is the subject of many complaints at NatWest. In a paper derived from the same study, Weeks argues that IT's great potential to



change work methods and dislocate employees makes it the focus of attention. The ways in which workers deal with IT-mediated change, as with other forms of organizational change, can be subtle and hard to observe.

Weeks's findings about corporate culture extend far beyond British banks. Organizations can have strong or weak cultures, he says, and the character of corporate culture can be positive or negative. However these attributes came into being, they're hard to alter once in place. Now there's a topic for complaint.

—Edward Prewitt



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Hot Seat

focus is shifting back to innovation. In fact, in 2004 Terkowitz began performing the CTO role as a consultant to the Post while

starting work at a private equity firm.

That kind of role won't make Gartner's list of things CIOs must do. But the venerable consultancy is rethinking how it defines the CIO's role. Kitzis says Gartner is considering looking at different structures for the CIO job. She says she's seen IS organizations that have their own CFO, CTO, head of HR and even a chief marketing officer. "We've begun to talk about the Office of the CIO," she says. Now there's a hat stand for you. (For insights into the Office of the CIO structure, see Susan H. Cramm's column "Oh, the Perils of the OCIO," this page.)

"When my crystal ball isn't as good as it needs to be, I need to be a good Houdini."

—Catherine Brune, CTO,
Allstate Insurance

For all that the requirements of IT leadership have changed, Brune doesn't think CIOs wear more hats than other executives. "You have people in all walks of life juggling things they didn't used to," she says. Brune does concede that the hats she wears as CIO are harder to manage, though, because they run across the enterprise, rather than being oriented toward a single business unit. Now there's a new title for your business card: Chief Juggling Officer. **CIO**

Send feedback on this article to hotseat@cio.com.
Michael Fitzgerald (michael@mffitzgerald.com) is a freelance writer based in Oakland, Calif.

Leadership Agenda BY SUSAN H. CRAMM

Oh, the Perils of the OCIO

The right way to deploy an Office of the CIO structure



There is a certain level of guilt associated with reading business publications. The topics usually aren't too much of a surprise, and the information, while occasionally insightful, inspires more self-reproach than action. The articles tend to focus on what I call the "important but not urgent" subjects, including strategy, metrics, governance, communications, portfolio and project management,

architecture and standards, financial and human resource management, security and privacy, and disaster recovery.

Because efforts in these areas don't deliver immediate performance improvements and require allocation of scarce management and analytical resources, it's all too easy to let these items slide. In response, CIOs often abdicate these responsibilities rather than appropriately delegate.

One type of abdication happens when you keep the work on your desk in the vain hope that available hours will magically appear on your calendar. A second type of abdication is more insidious. It occurs while chartering and managing the Office of the CIO (OCIO) organizations. Watch out for two common mistakes.

The first mistake is to hold the OCIO function responsible for outcomes out of its direct control, such as improved project delivery, value realization and compliance to standards. Only line IT organizations (that is, the technology delivery and services organizations) directly control the three P's of accountability—the people, the process and the P&L. Only they can be held accountable for the results of the OCIO initiatives.

It's inappropriate for CIOs to funnel all IT staff work into Office of the CIO organizations, in a misguided attempt to help the line IT organizations maintain focus on completing projects and delivering services. Without intense involvement from the line organizations, much of the work of the OCIO staff will be wasted. For living, breathing, frustrating examples, consider the performance of the typical project management office or architecture functions (enough said).

The second mistake CIOs often make is to keep piling work onto Office of the CIO staffers with little regard for their capacity or that of the line IT organizations they serve. You know you're in this situation if your OCIO is managing transactions rather than ideas. Great staff work requires time to think, which does not occur when people's calendars are full of meetings and report preparation.

The sad reality is that there are never enough resources to complete staff work because there is a never-ending succession of great ideas; staff work creates even more staff work. OCIO staff functions create work for the line organizations that, in turn, produce stuff that has to be reviewed, approved and reported on by the staff organizations.

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Hot Seat

To make headway on your "important but not urgent" list (and alleviate your guilt), you need to:

1. Focus on the IT outcomes you'll actively manage.
2. Maintain lean OCIO staff organizations, and hold them accountable for defining the necessary policies and processes—translating data into insights and alerting the line leaders and you (in that order) so that there are few surprises along the way.
3. Hold the line IT organizations accountable for outcomes related to the staff work.
4. Rotate your OCIO staff employees back into line roles after two to three years so that their designs, relationships and insights are based in reality—not the latest conference.

For example, if one of your important outcomes is a more focused, higher-value IT agenda, then strategy-making should be on your radar screen. Designate a staffer to define real-world strategy-making objectives, processes, templates and time line; ride herd over the progress and quality; and consolidate the results. At the same time, ensure that the line organizations do the heavy lifting of the strategy-making process—namely, executing the process and completing the templates, according to the time line defined by your Office of the CIO.

Support your OCIO staff organizations by reviewing their results with the leaders of the line IT organizations and bringing them back into the fold, if necessary. Because the line organizations report to the CIO rather than the OCIO, they will be motivated to do quality staff work for the OCIO only if the CIO talks to them about it.

This column is in response to a reader who asked what I think about the Office of the CIO concept. My

advice is that if you want to make progress on your "important but not urgent list," then pick your battles, slim down your staff organizations, and stay involved. Once the new processes are baked in to your IT organization, you can reduce staff involvement even further and move on to the next priorities on the never-ending list.

Reader Q&A

Susan H. Cramm answers questions on "Oh, the Perils of the OCIO"

Q: The notion of an Office of the CIO may be appealing, but it addresses the symptom rather than the cause. The root problem is functional consolidation of "computer people." If the OCIO concept is effective, then why don't insurance companies have a CMO (chief mathematics officer) to which actuarial, finance and accounting people report?

A: You do see chief mathematics officers—they are called CFOs. Most companies centralize staff functions within the organizations of the CFO, CAO or COO (including functions such as accounting, finance, strategy, risk management, human resources and facilities) rather than letting each line organization duplicate these functions in their entirety. There are two reasons for doing this—fiduciary and efficiency. However, in separating these staff functions, there is always the risk that line organizations' accountability and authority become muddled and diluted. It is the responsibility of those running these organizations to recognize the line as their customers, to ensure that ultimate accountability remains with those who can truly influence results.

Q: My 11 years of experience as a field services manager and director tell me

that the number-one thing that IT folks (techs) do worst is administrative tasks, while the number-one request from customers is for "administrivia"—report on this, quantify that, quote this, find the root cause on that.... Given budgets, this makes me want to retain dedicated IT administrative staffers to handle reporting and field client requests for data and information.

A: Your comments get to the heart of the OCIO dilemma. It's a great idea to provide staff support to line organizations in order for them to fulfill their obligations. In your case, it may make sense to conduct root-cause analysis on behalf of the technologist. However, it does not make sense to hold the staff organization responsible for remediation of the issue. Only those doing the work can be held accountable for the outcomes of the OCIO and administrative support functions.

Q: What is a typical project management office (PMO)? Is there value to the PMO, and if so, what?

A: I can't imagine running an IT organization without some type of PMO, at a minimum as a mechanism for the CIO to see a consolidated view of project status and financials. Regardless of the form of the PMO—from centralized management of large enterprise projects to decentralized project management with centralized portfolio management, monitoring, reporting, standards and training—the mistake most often made is to hold the PMO, rather than the IT leaders, directly accountable for project success and the utilization of standard practices. **CIO**

To see more reader questions and answers from Susan H. Cramm, go to www.cio.com/leadership/agenda.html. Cramm is president of Valuedance, an executive coaching firm based in San Clemente, Calif. Her e-mail address is scramm@cox.net.

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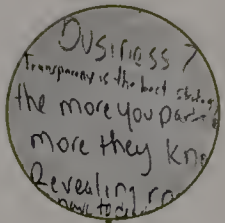
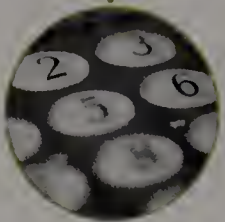
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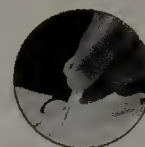
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A case study with two members of the
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who are rebuilding and refocusing the
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your electronic and physical assets?

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a Crisis

A run of nasty viruses and a major
power blackout provide several
lessons we can take to heart.

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a Capital P

It's an election year; no candidate is
really talking about "IT issues"—but a
new spate of proposed legislation will
impact the CIO's job.

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Research findings and best practices
on everything from finance to staffing
to marketing/communications.

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What are the high stakes battles
and how will the outcome shape
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The complaints about the overall lack of
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to make it better?

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Are we stifling innovative products and
services because CIOs are afraid to buy
from small firms and start-ups?

Reality Bites

Many enterprise applications turn into
major disappointments, if not disasters.
Were they over-hyped? Were our
expectations unrealistic? What
separates winners from losers?



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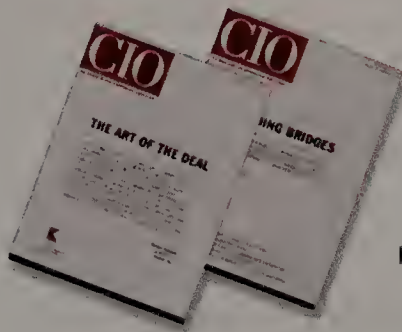
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March 1, 2004

COVER STORY The Truth About CMM

By Christopher Koch | 48

With CIOs increasingly dependent on outside service providers to get their software projects completed, they have come to view the Capability Maturity Model, or CMM, as the USDA stamp of approval for software providers. However, CIOs who stake their companies' projects and their own credibility on CMM ratings should be wary. We found that some software development companies lie and buy their way up the assessment scale to attract business. CMM assessors are known to have traded their reputations and CMM's credibility for cash. Other developers who have earned legitimate Level 5 ratings for one small segment of their development operation or a particular project, hype the honor by applying it falsely to their entire enterprise. The CMM certification process is inherently flawed, and the authority that grants CMM certifications does nothing to police company claims. CIOs need to understand these limitations and apply due diligence to vendor claims. Among other things, they should find out who did the CMM assessment, what part of the company was tested and how long ago the testing was done.

"If CIOs don't know enough to ask the right questions, they will get hornswoggled."

—WATTS HUMPHREY, CMM CREATOR,
NOW A FELLOW AT THE SOFTWARE
ENGINEERING INSTITUTE

AARP Is Talking 'Bout That Generation

By Elana Varon | 58

AARP, THE ADVOCACY GROUP AND \$636 MILLION BUSINESS, must retool to meet the needs not only of its current members (60 percent of whom are 65 or older) but the demands of an emerging constituency and potentially lucrative market—the 76 million baby boomers approaching retirement. Unlike their parents, boomers are not good at waiting. When they buy products and services or look for information, they want choice, convenience and control. AARP's \$50 million annual IT budget is being tapped to respond to boomer needs. In the past, AARP coded data exchanges separately between its member database and each provider, a time-consuming and expensive process. Now there will be a standard interface, based on Web services, that will speed integration with suppliers and enable AARP to improve its customer service in boomer-time.

Interview: Maurice Schweitzer

By Stephanie Overby | 66

PEOPLE HAVE A BIAS THAT AUTOMATICALLY ASSOCIATES input quantity (such as how much time it takes to make a car) with output quality (how well the car performs). Such input information does not necessarily correspond to outcome, but we are hardwired to associate the two, says Wharton professor and human behavior expert Maurice Schweitzer. Some people will prey on our input bias, causing us to make poor decisions or judgments, to add to their advantage. Employees, vendors and business leaders may all take advantage of a CIO's natural biases to manipulate IT decisions. Fortunately, as Schweitzer tells in this interview, there are ways to guard against making mistakes based on bias. For example, use panels to judge such things as software products, since panelists will usually lack the input information that could bias the CIO's decision.

How to Hire So You Don't Have to Fire

By Meridith Levinson | 72

RECENTLY, CIOs HAVE BEEN MORE PREOCCUPIED WITH LAYOFFS than with recruiting. But as the economy rebounds, CIOs must dust off interview techniques to become masters of assessing not just skills but candidates' dispositions. Companies want people who are passionate about their work and who play well with others—basically, good attitudes. Though candidates are always on their best behaviors in interviews, there are techniques for CIOs. First, ask questions that aren't related to skills. For example, ask candidates if they've ever fired anyone and how they've handled it. This will reveal much about attitude. Some CIOs use behavioral or personality assessment tools, such as the Performance Index. Others try to leverage relationship recruiting, seeking out people with the right attitude through those who know them best, and then actively recruiting those prospects.

The Myths of Open Source

By Malcolm Wheatley | 82

THAT COMPANIES ARE EMBRACING I.T. ARCHITECTURE chiefly built around open-source software signals a sea change in attitudes. The attraction of the open-source model originally centered on cost, but the price tag—or lack of it—seems irrelevant for companies betting their architecture on open source. At benefits administrator Employease, performance is what matters. The move to Linux cut the company's server failure rate from one per day using Windows NT to less than twice per month. Linux also runs much faster than NT, effectively increasing server capacity between 50 percent and 75 percent. While downplaying cost savings from license fees, open-source-based enterprises cite reduced maintenance costs from the elimination of vendors requiring them to migrate to new versions of proprietary software or pay for extra support. At travel company Sabre Holdings, a major migration to open source is under way, prompted by an estimated savings of tens of millions of dollars during the next five years.



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